# FORGES BLOWERS DRILLS



CANEDY OTTO M'F'S CO.

CHICAGO HEIGHTS, ILL

F. E. FURNISS, Sec. and Treas.

#### DESCRIPTIVE PRICE LIST No. 8

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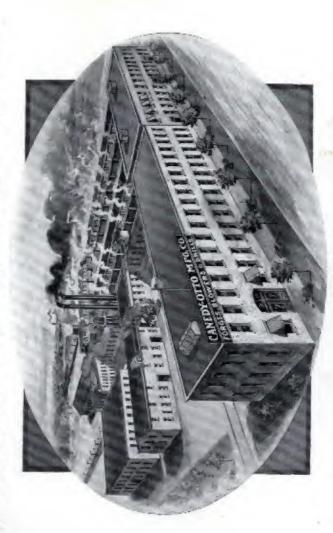
For Repair Lists of above, see back of book.

MADE BY

#### CANEDY-OTTO M'F'G CO.

CHICAGO HEIGHTS, ILL.

# WHERE IT IS ALL MADE



Canedy-Otto Manufacturing Co. CHICAGO HEIGHTS

# To be Brief:

IN this our Eighth Price List, we again present the World's best line of Forges, Blowers and Drills.

NOISE is not always business; hence we only take occasion to say that,

FORGES, BLOWERS AND DRILLS are a specialty with us and not a side issue.

Quality is the true test of cheapness. Merit is the basis of our success.

Yours Briefly,

CANEDY-OTTO M'F'G CO.

Now, please read pages 45, 65 and 92.

# WE ARE FREQUENTLY ASKED Which Style of Forge or Blower is the Best

This question the user must himself answer. It is simply whether he prefers to "pump a lever" or "turn a crank"

THEY ARE ALL THE BEST.
We have a habit of furnishing
:: :: ONLY THE BEST :: ::

#### THE HEARTH of Royal and Western Chief Forges 1,99, 100, 200 and AA.

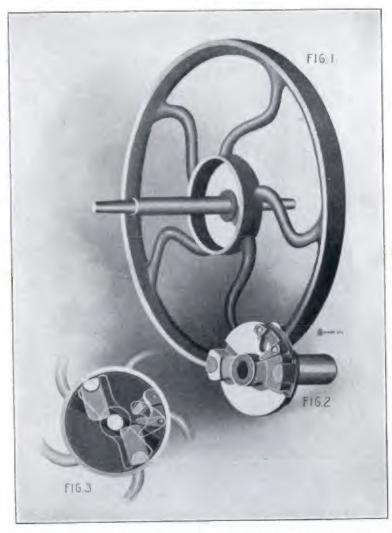
Showing Solid Heavy Fire-pot, Side and Center Blast Tuyere Ball. All separate from Hearth. No Clay necessary.



NO OTHER FORGE IS BUILT LIKE THIS.

#### BACKSTROM'S CLUTCH

(Patented June 19, 1960.)
A NOISELESS ADJUSTABLE FRICTION CLUTCH.



Used on all Western Chief and Hero Forges and Western Chief Blowers that have Lever Movement.

(Description on opposite page.)

#### BACKSTROM'S CLUTCH

IS USED ON ALL

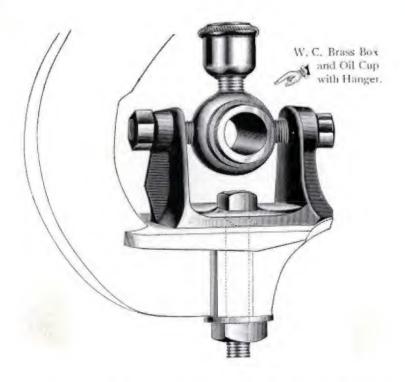
#### Western Chief and Hero Forges and Western Chief Blowers

#### THAT HAVE LEVER MOVEMENT

- Fig. 1. Represents the fly-wheel of Forge or Blower, in the hub rim of which the clutch works.
- Fig. 2. Is a plain view of clutch, with all parts properly assembled, ready to insert into hub of flywheel. It can not slip.
- Fig. 3. Shows the manner in which the clutch is adjustable By simply loosening the set-screw in slotted hole and moving it in direction shown, the diameter of clutch is correspondingly increased. This feature permits the clutch to be perfectly fitted to hub rim of wheel, and also provides means for instantly taking up any wear which might occur.

#### An Everlasting Mechanism

#### W. C. Brass Box and Hanger



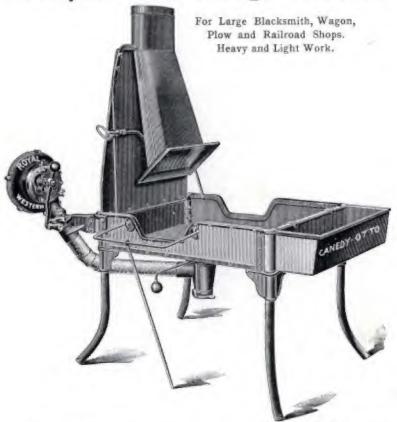
The above is a view of the Brass Boxes and Oil Cups as used on "Western Chief" Forges and Blowers; showing also the Hanger in which they are supported by means of set-screws with jam-nuts. The hanger is adjustable; and the hole in the box is tapered, as is also the end of shaft which enters it, so that any wear which might occur in them is readily taken up by simply loosening the bolt and setting the hanger and box farther in. The box oscillates on its bearings, adjusting itself to the line of the shaft, thereby making it impossible for the shaft to bind or run hard.

# ROYAL (Steel) FORGES

Pages 10 to 23

(Repair List in Back of Book)

Forges under this name have STEEL Hearths, with Royal Blower Attachment—Crank Movement only.



Fan, 12 inches. Hearth, 30 x 40 inches. Height, 30 inches. Length over all, 48 inches.

Crank Turns Forward or Backward. Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation, it can be easily and quickly taken apart, and all parts packed in its own Hearth, which forms a strong shipping case. See page 15.

PRICE Without Tank, weight, 225 lbs. \$70.00 With Tank (as illustrated), weight, 255 lbs. 75.00

( Always shipped WITHOUT TANK, unless so ordered.)
FOR LIST OF REPAIRS, SEE PAGE 111.

For Blacksmith, Wagon and Plow Shops, Etc. Heavy and Light Work.



Fan, 12 inches. Hearth, 30 x 40 inches. Height, 30 inches. Length over all, 48 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch iron.

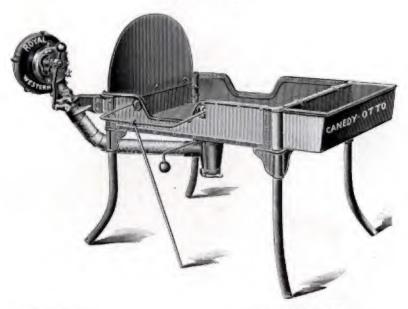
In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast.

PRICE Without Tank, weight, 215 lbs. \$65.00 With Tank (as illustrated), weight, 245 lbs. 70.00

(Always shipped WITHOUT TANK, unless so ordered.)
FOR LIST OF REPAIRS, SEE PAGE 111.

For Outdoor Construction and Contract Work.

Light or Heavy.



Fan, 12 inches. Hearth, 30 x 36 inches. Height, 30 inches. Length over all, 44 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation, it can be easily and quickly taken apart and all parts packed in its own Hearth, which forms a strong shipping case. See page 15.

PRICE Without Tank, weight, 190 lbs. . . \$58.00 With Tank (as illustrated), weight, 220 lbs. 63.00

(Always shipped WITHOUT TANK, unless so ordered.)



Crank Turns Forward or Backward. Capacity to heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation, it can be easily and quickly taken apart and all parts packed in its own Hearth, which forms a strong shipping case. See page 15.

PRICE Without Tank, weight, 200 lbs. . . \$65.00 With Tank (as illustrated), weight, 230 lbs. 70.00

(Always shipped WITHOUT TANK, unless so ordered.)

For Horseshoers, Boilermakers, Repair Shops, Etc.



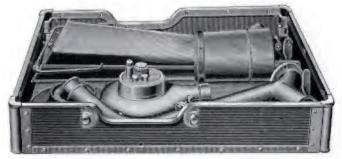
Fan, 12 inches. Hearth, 30 x 36 inches. Height, 30 inches. Length over all, 44 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast.

PRICE Without Tank weight, 195 lbs. . . . \$60.00 With Tank (as illustrated), weight, 225 lbs. 65.00 (Always shipped without TANK, unless so ordered.)

#### A Convenient Way to Transport When Necessary



The above illustration shows manner in which Royal Steel Forges Nos. 10, 20 and 30 (shown on pages 10, 12 and 13) can be packed for shipment if desired, all parts being placed inside its own hearth. A very convenient method, takes but little space and everything protected against loss or breakage.



#### Royal Western Chief Smoke Conveyor

(Patented)

This new improvement has met with great success. It can be adjusted forward or backward as required, and is preferred by many.

It is furnished with Royal Western Chief Forges Nos. 10, 30 and 200.

(See pages 10, 13 and 25.)

#### LIST PRICE . . . \$10.00

(Subject to same discount as on Royal Forges.)

# Royal (Steel) Forges Nos. 40 and 60

For Boilermakers, Rivet Work, Mines, Quarries, Armies, Navies, Etc.



Crank Turns Forward or Backward. Capacity to heat 31/2-inch iron.

These Forges are high-grade and first-class, and can be quickly knocked down and packed in a box 22 x 24 x 9 inches. The best Army and Navy Forge made.

	No 40				\$40.00
DDICE	1 140, 40				25 00
PRICE	No. 60		2.0	4	35.00

#### Royal (Steel) Forges Nos. 41 and 61

For Elevated Railway, Buildings, High-up Construction and Trestle Work, Etc.



Crank Turns Forward or Backward. Capacity to heat 31/4-inch iron.

The Ring Base on these Forges permits their use on bridges and high-up places, where it is difficult to place a Forge that has legs only. They are easily and quickly taken apart for shipping or transportation.

DOLOR !	No. 41			\$43.00
PRICE	No. 61			38.00

#### Royal (Steel) Forges Nos. 50 and 70

For Toolmakers, Tin Shops, Jewelers, Dentists, Small Repair Shops.

INDOOR WORK.



Crank Turns Forward or Backward. Capacity to heat 31/4-inch iron.

Can be quickly taken apart for shipping or transportation.

DDICE	(1	No.	50		*		\$43.00
PRICE	11	No.	70				38.00

#### Royal (Steel) Forges Nos. 55 and 75

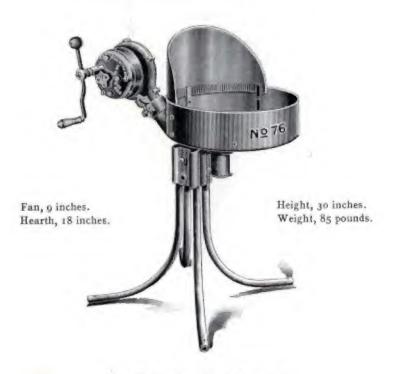
For Sawmills, Furniture Factories, Oil Refineries, Wood Shops, Etc.



Crank Turns Forward or Backward. Capacity to heat 3 %-inch iron.

This Forge is arranged for such places where it is objectionable and dangerous to have smoke, gas or sparks escape.

For Riveters, Boilermakers, Mines, Quarries, Etc.



Crank Turns Forward or Backward. Capacity to heat 31/4-inch iron.

Forge No. 76 is similar in appearance but cheaper in construction than our regular Royal Forges of like type.

For Bridge-builders, Contractors, Rivet Work, Etc.



Crank Turns Forward or Backward. Capacity to heat 3 1/2-inch iron.

In this Forge we aim to please customers who prefer Stand to Legs. It can be quickly taken apart for transportation. It is especially adapted to Miners, Bridgebuilders, Contractors, Railroad and Trestle Work, the Round Base giving it a solid foundation in high-up places. Hearth and Blower part can be detached from Stand and operated inside of Boilers and low-down places.

PRICE . . . . . . . . . . . \$35.00

For the Garage and Automobile Repair Shop.



Crank Turns Forward or Backward. Capacity to heat 31/2-inch iron.

This Forge, while suitable for all indoor use, is designed especially for the Garage and Automobile repair shop. The neatest and best forge for this purpose upon the market.

PRICE

\$38,00

Can be furnished with a full enclosed hood, it desired; then known as No. 82, Price, \$40.00

# ROYAL (Western Chief) FORGES

Pages 24 to 35

(Repair List in Back of Book)

Forges under this name have CAST-IRON Hearths, with Royal Blower Attachment—Crank Movement only.

For use of Large Blacksmith, Wagon, Plow, Railroad Shops, Etc., where Heavy Work Is Done, and a First-class Forge and Fire Are Needed.



Fan, 12 inches. Hearth, 31 1/2 x 45 1/2 inches. Height, 30 inches. Length over all, 53 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch iron.

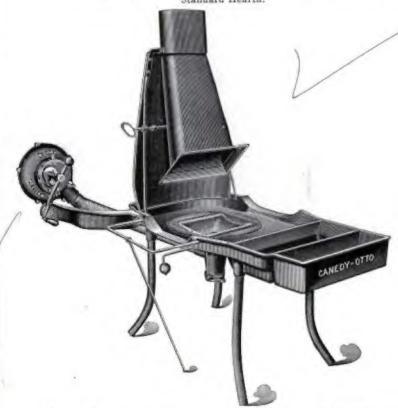
In this Forge we combine our "Royal" style of Blower with Western Chief Standard Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. We guarantee it fully. For detailed description of Hearth, see page 5.

PRICE With one Tank, weight, 295 lbs. \$50.00 With EXTRA Tank (as illust'd), weight, 325 lbs 55.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

# Royal CHIEF Forge No. 200

With Improved Smoke Conveyor, Royal Blower and Western Chief Standard Hearth.



Fan, 12 inches. Hearth, 31 1/2 x 45 1/2 inches. Height, 30 inches. Length over all, 53 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch iron.

In this Forge we combine our "Royal" style of Blower with Western Chief Standard Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. We guarantee it fully.

For detailed description of Hearth, see page 5.

PRICE With one Tank, weight, 300 lbs. . . \$55.00 With EXTRA Tank (as illust'd), weight, 330 lbs. 60.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)
FOR LIST OF REPAIRS, SEE PAGE 111.

For Well-drillers, Railroads, Boilermakers, Quarries, Contractors, Outdoor Work, Etc.



Fan, 10 inches. Hearth, 23 x 34 inches.

Height, 30 inches. Weight, 180 pounds.

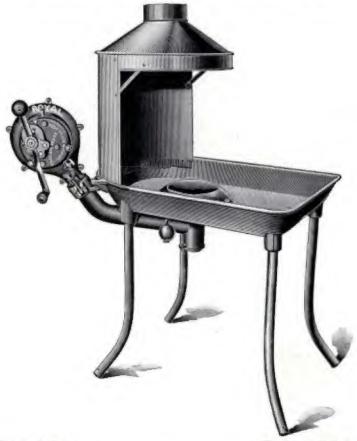
Crank Turns Forward or Backward. Capacity to heat 31/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot.

PRICE

\$38.00

For Horseshoers, Small Blacksmith Shops, Boilermakers, Etc.



Fan, 10 inches. Hearth, 23 x 34 inches. Height, 30 inches. Weight, 185 pounds.

Crank Turns Forward or Backward. Capacity to heat 3 1/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot.

PRICE

\$42.00

Made Especially for Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc., where Sparks, Escaping Gas, Etc., are Objectionable.



Crank Turns Forward or Backward. Capacity to heat 31/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot, also Hood having doors, front and back.

PRICE

\$45.00

# Royal CHIEF Forge No. 1051

For Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Dentists. Etc., where Sparks, Escaping Gas, Etc., Are Objectionable.



Fan, 10 inches. Hearth, 22 inches. Height, 33 inches. Weight, 130 pounds.

Crank Turns Forward or Backward. Capacity to heat 3 1/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth—will outwear Steel Hearth.

PRICE FOR LIST OF REPAIRS, SEE PAGE 111.

\$38.50

Excellent for Mines, Quarries, Bridge-builders, Railroad and Outdoor Repair or Construction Work.



Fan, 10 inches. Hearth, 22 inches. Height, 33 inches. Weight, 120 pounds.

Crank Turns Forward or Backward. Capacity to heat 31/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth—will outwear Steel Hearth. The most serviceable constructed for outdoor use.

PRICE

\$33.00

For Toolmakers, Jewelers, Dentists, Tin Shops, Repair Shops, Etc.



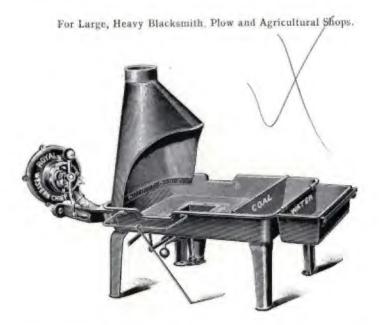
Crank Turns Forward and Backward. Capacity to heat 3 1/2-inch iron.

The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth—will outwear Steel Hearth.

PRICE

\$36.00

# Royal (WESTERN Forge No. 8



Fan, 12 inches. Height, 26 inches. Hearth, 37 1/2 x 41 inches. Over all, 37 1/2 x 51 inches.

Crank Turns Forward or Backward. Capacity for Largest Work.

This Forge has solid Fire-pot with side and Center Blast Tuyere Ball, also Tool Rest and Racks.

1	Plain, no Tank, no Hood, weight 435 lbs.	\$65.00
	Wish Tank no Hood weight 500 lbs	70.00
PRICE	With Hook, no Tank, weight 450 lbs	70.00
	With Tank and Hood (as illustrated), weight 515 lbs.	75.00

When specially requested, will furnish Round Canopy Hood at same price as Half-hood.

#### Royal (WESTERN Forge No. 9

For Large, Heavy Blacksmith, Plow and Agricultural Shops.



Fan, 12 inches. Height, 26 inches. Hearth, 38 x 50 inches. Over all, 38 x 60 inches.

Crank Turns Forward or Backward. Capacity for Largest Work.

This Forge has solid Fire-pot with Side and Center Blast Tuyere Ball, also Tool Rest and Racks.

	Plain, no Tank, no Hood, weight 500 lbs.	\$70.00
PRICE	With Tank, no Hood, weight 565 lbs.	75.00
	With Hood, no Tank, weight 515 lbs	75.00
	With Tank and Hood (as illustrated), weight 580 lbs.	80.00

(When specially requested, will furnish Round Canopy Hood at same price as Half-hood.)

# Royal CHIEF Forge No. 99

For Large, Heavy Construction and Contractors' work.
Out-door use.



Fan, 12 inches. Hearth, 3112 x 451, inches. Height, 30 inches.

Length over all, 53 inches.

Crank Turns Forward or Backward. Capacity to heat 4-inch iron.

In this Forge we combine our "Royal" style of Blower with the Western Chief Standard Hearth, having solid Fire-pot with Tuyere Ball furnishing side and center blast. We guarantee it fully.

For detailed description of Hearth, see page 5.

PRICE With one Tank, weight 290 lbs. \$46.00 With EXTRA Tank (as illust'd), weight 320 lbs. 51.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

Western Chief
Hero
Leader
Challenge
and Chicago

# FORGES

Pages 36 to 72

(Repair List in Back of Book.)

Forges under above names are all with Cast-iron Hearths, and (excepting Stationary and Leader Forges), are operated by lever movement or pulley power or both.

The Largest Portable Forge Made.



Fan, 141/2 inches. Hearth, 311/2 x 451/2 inches. Height, 30 inches. Length over all, 53 inches.

Capacity to heat 41/2-inch iron.

This Forge is adapted to the largest, heaviest work. It has a solid Fire-pot with Tuyere Ball, furnishing side and center blast. Is equipped with Brass Boxes and Oil Cups throughout, also Noiseless Adjustable Friction Clutch. This forge can be furnished reversed, to operate with the right arm, for teft-handed smiths, when desired. For detailed description of Hearth, see page 5.

PRICE With One Tank, weight 315 lbs. \$50.00 With EXTRA Tank (as illust'd), weight 345 lbs. \$55.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)



Fan, 141/2 inches. Hearth, 31 1/2 x 45 1/2 inches. Capacity to heat 45%-inch iron.

Height, 30 inches. Length over all, 53 inches.

Size of Pulleys, 71/4 x 11/4 inches, should run 125 Revolutions per minute.

This Forge is arranged for power, and adapted to heavy work. It is equipped with Solid Fire-pot with Tuyere Ball furnishing side and center blast. Brass Boxes and Oil Cups throughout. When desired, can be furnished with Hand Power Attachment, a convenience when power is not running. It has Blast Gate to regulate Blast when driven by power. For detailed description of Hearth, see page 5.

With One Tank . Weight, 315 lbs., \$53.00 PRICE With Extra Tank (as illustrated) " 345 "
With One Tank and Hand Power " 330 " 58.00 -57.00With Extra Tank, also Hand Power " 62.00

(Never shipped WITH EXTRA TANK, nor HAND POWER, unless asked for.) FOR LIST OF REPAIRS, SEE PAGE 113.

Suitable for Bridge-builders, Railroads, Quarries, Well-drivers, Boilermakers, Etc.



Fan, 12 inches. Hearth, 23 x 34 inches. Height, 30 inches. Weight, 195 pounds.

#### Capacity to heat 3-inch iron.

This Forge is equipped with Brass Boxes and Oil Cups throughout, also Noiseless. Adjustable Friction Clutch, and has a Duck Nest Fire-pot.

Suitable for Boilermakers, Horseshoers, Small Blacksmith Shops, Etc.



Fan, 12 inches. Hearth, 23 x 34 inches. Height, 30 inches. Weight, 200 pounds.

#### Capacity to heat 3-inch iron.

This Forge is equipped with Brass Boxes and Oil Cups throughout, also Noiseless, Adjustable Friction Clutch, and has a Duck Nest Fire-pot.

For Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc.



Fan, 12 inches. Hearth, 23 x 34 inches. Height, 30 inches. Weight, 215 pounds.

Capacity to heat 3-inch iron.

This Forge, having full enclosed Hood, with Doors both front and back, is desirable where it is dangerous or objectionable to have Smoke, Gas or Sparks escape. Is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch, and has a Duck Nest Fire-pot.

	With Hand Lever (as illustrated)		,		\$42.00
PRICE -	With Power Attachment only .	4			47.00
	With both Hand and Power .	4			50.00

For Small Blacksmith and Repair Shops where Power is Used.



Fan, 12 inches. Hearth, 23 x 34 inches. Height, 30 inches. Weight, 205 pounds.

Capacity to heat 3-inch iron.

Size of Pulleys, 71/2 x 13/4 inches, should run 125 Revolutions per minute.

Is equipped with Brass Boxes and Oil Cups throughout, and has a Duck Nest Fire-pot.

When desired, it can be furnished with Hand-power Attachment, a convenience when power is not running.

PRICE Power Attachment only (as illustrated) \$45.00 Power Attachment, also Hand Power 48.00

Always shipped for POWER ONLY, unless otherwise ordered.

A Splendid Forge for Mines, Quarries, Bridge-builders, Railroad and Outdoor Repair Work.



Fan, 9 inches. Hearth, 22 inches. Height, 33 inches. Weight, 120 pounds.

Capacity to heat 2 1/2-inch iron.

It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

PRICE . . .

\$24.00

For Toolmakers, Bicycle Repair Shops, Jewelers, Dentists, Tin Shops, Farmers, Etc.



Fan, 9 inches. Hearth, 22 inches. Height, 33 inches. Weight, 125 pounds.

\$27.00

Capacity to heat 3 1/2-inch iron.

It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

For Jewelers, Dentists, Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc.



Fan, 9 inches. Hearth, 22 inches.

Height, 33 inches. Weight, 130 pounds.

Capacity to heat 25, -inch iron.

It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

PRICE

\$29.50



# NOTICE

DON'T leave us to guess at what is wanted on your orders.

If a FORGE, that is listed with and without Hoods, Tanks, etc., state the way you want it.

If a BLOWER, be explicit on essential points; Names and Sizes.

If a DRILL, state whether wanted with or without pulleys; also whether CHUCK shall be with ½-inch or ¼/4-inch hole.

A little care in these matters will save delays, errors, disappointments.

### Western Chief Forge Size CC

A Small Stationary Blast Forge, Suitable for the Requirements of Ordinary Medium-sized Work.



Hearth, 23 x 34 inches.

Height, 30 inches.

Weight, 145 pounds.

This Forge has no blast machinery, and is intended for use in shops where power blast is furnished, or can be used with ordinary blower or bellows. It has a blast gate in its pipe connections, also has Duck Nest Fire-pot, and is well adapted to all ordinary, mediam-sized work.

### Western Chief Forge Size AA

A Stationary Blast Forge, of Size and Construction Suitable for all the Requirements of Ordinary Shop Use.



Hearth, 31 1/4 x 45 1/4 inches. Height, 30 inches. Length over all, 53 inches.

This Forge has no blast machinery; it is for use in shops where power blast is furnished, or can be used with ordinary bellows or blower. It has Solid Fire-pot, also side and center blast Tuyere Ball, Tool Rest, etc. It is adapted to heavy work, and is much superior to a brick forge. For detailed description of Hearth, see page 5.

DESCRIPTION	WEIGHT	PRICE
Plain, One Tank only, no Hood	220	\$25.00
With EXTRA Tank, no Hood	250	30.00
With one Tank and Half-hood	235	30.00
With EXTRA Tank and Half-hood (as illust'd)	265	35.00

### Western Chief Forge Size BB

A Stationary Blast Forge, very Large, Heavy and Strong. Is Cheaper and much Handsomer than a Brick er Stone Forge.



Height, 26 inches. Hearth, 37 1/2 x 41 inches. Over all, 371/2 x 51 inches.

This Forge is intended for shops supplied with power blast, or can be used with ordinary bellows or blower, if desired. Is equipped with Solid Fire-pot, with side and center blast Tuyere Ball. Has Tool Rest and Racks, and Lever Attachment to blast Gate, by which the smith easily regulates the blast. The most complete Forge of its kind on the market.

	Plain, no Tank, no Hood	*		weight.	375	lbs.	\$35.00
	With Tank, no Hood . With Hood, no Tank .	4		**	440	8.6	40.00
	With Hood, no Tank .			4.4	390	5.1	40.00
	With Tank and Hood (as if	llust	rate	d) "	455	4.4	45.00

When specially requested, will furnish Round Canopy Hood at same price as 'Half-hood.')

### Western Chief Forge Size XBB

A Stationary Blast Forge, very Large, Heavy and Strong. Is Cheaper and much Handsomer than a Brick or Stone Forge.



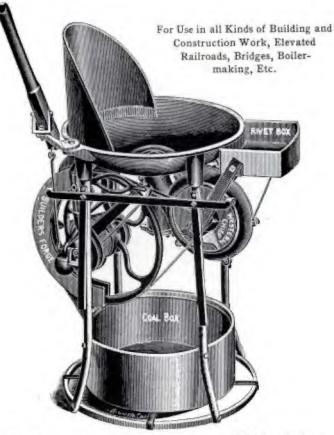
Height, 26 inches. Hearth, 38 x 50 inches. Over all, 38 x 60 inches.

This Forge is intended for shops supplied with power blast, or can be used with ordinary bellows or blower, if desired. It is equipped with Solid Fire-pot, with side and center blast Tuyere Ball. Has Tool Rest and Racks, and Lever Attachment to Blast Gate, by which the smith easily regulates the blast. The most complete Forge of its kind on the market.

PRICE	Plain, no Tank, no Hood			weight,	440	lbs.	\$40.00
	With Tank, no Hood . With Hood, no Tank .			6 Q	505	4.6	45.00
	With Hood, no Tank .			3.4	455	5.8	45.00
	With Tank and Hood (as illi	ustr	ated		520	9.9	50.00

(When specially requested, will furnish Round Canopy Hood at same price as Half-hood.)

### Western Chief "Contractors and Builders Forge" No. 16



Fan, 12 inches. Hearth, 22 inches. Height, 33 inches. Weight, 170 pounds.

It is equipped with Adjustable Box for holding rivets to be heated, and also Coal Box conveniently located, though out of the way. The Belts are protected against damage from weather by shields which cover them. It has adjustable handles for carrying or moving the Forge from one place to another, which, when Forge is in use, are dropped down and not in the way. Its operation is extremely easy, as it is equipped with Brass Boxes and Oil Cups, and Noiseless Adjustable Friction Clutch.

PRICE . . .

\$40.00

### Western Chief "Contractors and Builders Forge" No. 16

(For description, see opposite page.)



The above cut shows the manner in which our Western Chief "Contractors and Builders Forge" is arranged for moving from one place to another. The Rivet Box is made to swing down underneath the Hearth, if desired, and the handle to raise so that it can be very easily carried. The frequent necessity for moving the position of a forge in building and construction work makes these features most valuable.

### Western Chief Combined Forge Size AG

An Excellent Substitute for the Old-fashioned Brick Forge and Bellows.



DIMENSIONS.

FORGE { Over all, 31 ½ x 53 inches. Height, 30 inches. Weight, 265 pounds.

BLOWER Fly-wheel, 36 inches. Fan, 16½ inches. Weight, 150 pounds.

This combination of Forge and Blower is complete in every detail, and much more desirable than a brick forge and bellows. The Blower runs very easily and furnishes a fremendous blast; and, as it sets up close behind the Forge, but very little space is taken. The Forge is equipped with side and center blast Tuyere Ball, and also Solid Firepot. Ashes and cinders are easily removed. Everything within easy reach and arranged for the convenience of the smith. For details of Forge Hearth, see page 5.

	Complete (as illustrated)	\$70.00
	Without Hood or without Extra Tank	65.00
	Without both Hood and Extra Tank	60.00

FOR LIST OF REPAIRS, SEE PAGES 119 AND 135.

#### **EVERY**

### FORGE, BLOWER AND DRILL

UNDER THE NAME

# "Royal"

OR

### "Western Chief"

IS GUARANTEED TO CONTAIN

THE BEST QUALITY
THE BEST WORKMANSHIP
THE BEST FINISH
THE BEST EVERYTHING

CONSEQUENTLY, THEY ARE THE BEST AND CHEAPEST FORGES, BLOWERS AND DRILLS OFFERED

### Hero Forge No. 6

Suitable for Mines, Quarries, Prospectors, Bridges and Outdoor Work.



Fan, 71/2 inches. Hearth, 18 inches.

Height, 30 inches. Weight, 90 pounds.

This Forge has capacity to heat 11/2-inch iron, also has shelf as shown, and is equipped with Noiseless, Adjustable Friction Clutch.

PRICE

\$20.00

### Hero Forge No. 7

Very Popular with Toolmakers, Tin Shops, Farmers, Jewelers, Small Repair Shops, Etc.



Fan, 756 inches. Hearth, 18 inches. Height, 30 inches. Weight, 95 pounds.

This forge has capacity to heat 11/2-inch iron, also has shelf and Hood as shown and is equipped with Noiseless, Adjustable Friction Clutch.

PRICE

\$23.00

### Leader Forge No. 11

Suitable for Light Outdoor Work.



Fan, 71/2 inches. Hearth, 18 inches.

Height, 30 inches. Weight, 65 pounds.

Capacity to heat r-inch iron.

PRICE

\$14.00

## Leader Forge No. 12

Suitable for Light Indoor Work.



Fan, 7% inches. Hearth, 18 inches.

Height, 30 inches. Weight, 70 pounds.

Capacity to heat r-inch iron.

PRICE

\$16.00

### Leader Bench Forges

Nos. 13 and 14



Fan, 71/2 inches.

Hearth, 18 inches.

Height, 12 1/2 inches.

Capacity to heat 1-inch iron.

Can be packed in box, 19x19x14 inches.

PRICE { No. 13 with Shield, weight, 65 lbs. . . \$14.00 No. 14 with Half-hood, weight, 70 lbs. . 16.00

### Challenge Forge No. 1c



Fan, 141/2 inches. Hearth, 45 x 31 inches.

Height, 30 inches. Length over all, 53 inches.

Capacity to heat 4-inch iron.

This Forge is constructed for the heaviest kind of work. It has an improved Fire-pot, separate from Hearth, which securely holds clay. The Blast is direct from Fan and very powerful, by which, in connection with Side and Center Blast Tuyere Ball, a quick heat with little labor is secured.

PRICE Without Tank, weight, 275 lbs. \$50.00 With Tank (as illustrated), weight 300 lbs. \$55.00 Power Attachment, \$2.50 net, extra.

(Always shipped WITHOUT TANK, unless specially ordered.)

### Challenge Forge No. 2c

Suitable for Boilermakers, Bridge-builders, Railroads, Well-drivers, Outdoor Work.



Fan, 121/2 inches. Hearth, 35 x 23 inches.

Height, 30 inches. Weight, 180 pounds.

Capacity to heat 3-inch iron.

PRICE

\$36.00

### Challenge Forge No. 3c

Suitable for Machinists, Plumbers, Tin Shops, Locksmiths, Horseshoers, Small Blacksmith Shops, Etc.



Fan, 121/2 inches. Hearth, 35 x 23 inches.

Height, 30 inches. Weight, 185 pounds.

Capacity to heat 3-inch iron.

PRICE

\$40.00

### Challenge Forge No. 4c

For Quarries, Boilermakers, Mines, Bridge-builders, Prospectors, Outdoor Work, Etc.



Fan, 91/2 inches. Hearth, 22 inches.

Height, 33 inches. Weight, 120 pounds.

Capacity to heat 21/2-inch Iron.

PRICE

\$24.00

### Challenge Forge No. 5c

For Bicycle Repair Shops, Toolmakers, Tin Shops, Plumbers, Light Repair Shops of any Kind.



Fan,	91/	i	nches.	
Hear	th,	22	inches	

Height, 33 inches. Weight, 125 pounds.

Capacity to heat 21/4-inch iron.

PRICE

\$27.00

### Challenge Forge No. 5½c

For Jewelers, Dentists, Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc.



Fan, 9½ inches. Hearth, 22 inches.

Height, 33 inches. Weight, 130 pounds.

Capacity to heat 21%-inch iron.

PRICE

\$29.50



# Complete Lists of Repairs

FOR ALL

### FORGES, BLOWERS AND DRILLS

IN THIS CATALOGUE WILL BE FOUND ON

Pages 110 to 152

In ordering Repairs, use same numbers and names of parts that we do—Result, you will get what you want.



Fan, 8 inches. Hearth, 18 inches. Height, 30 inches. Weight, 65 pounds.

A light, move-about Forge; adapted to light work. Is suited to quarries, mines, etc., and popular as a low-priced article.



Fan, 8 inches. Hearth, 18 inches. Height, 30 inches. Weight, 70 pounds.

Suitable for farmers, small shops, toolmakers, etc. Has half-hood for indoor use. An inexpensive Forge and well made.

PRICE

\$16.00



Fan, 81/4 inches. Hearth, 22 inches. Height, 30 inches. Weight, 85 pounds.

A very good ontdoor Forge for use on ranches, farms, at mines, quarries, etc., where expensive equipment is not a necessity.

PRICE

\$16.00



Fan, 8 1/4 inches. Hearth, 22 inches. Height, 30 nches. Weight, 90 pounds.

Has half-hood for indoor use, and well adapted to farmers, small shops, etc., where an inexpensive Forge is desired.

PRICE

\$19.00



Fan, 121; inches. Hearth, 25 x 36 inches.

Height, 30 inches. Weight, 170 pounds.

This Forge has a large, roomy Fire-pot, conveniently shaped Hearth and splendid blast; Ratchet Clutch. Is a serviceable Forge at a low cost.

PRICE

\$36,00

# Chicago Forge No. 153



Fan, 121, inches. Hearth, 25 x 36 inches.

Height, 30 inches. Weight, 175 pounds.

This Forge has a large, roomy Fire-pot, conveniently shaped Hearth and splendid blast; Ratchet Clutch. Is a very serviceable Forge at a low cost.

PRICE

\$40,00

FOR LIST OF REPAIRS, SEE PAGE 129.



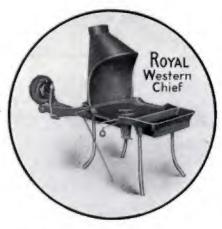
THE FORGE OF SYRIA.
(B. C. 300.)

# Our Forges, Blowers, Drills, Etc.

ARE ON SALE AT THE

PRINCIPAL DEALERS EVERYWHERE.

THE FORGE OF AMERICA.
(Present Time.)



# **BLOWERS**

Royal Tiger Western Chief Pressure

Pages 74 to 92

(Repair List in Back of Book.)

Crank Movement only, Lever Movement only, or both Crank and Lever Movement; also Pulley Power.

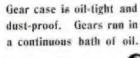
# Royal Blower

"The Successful Blower"





Noiseless and Easy to Operate.



Fire-pot is 8x91/2x4 inches inside.

Gears are Phosphor Bronze and Steel, flat and straight cut. No Spiral or Worm Gears.

> A powerful blast; lasting after blast.



Fan, 12 inches. Height, 47 inches.

Weight, 135 pounds.

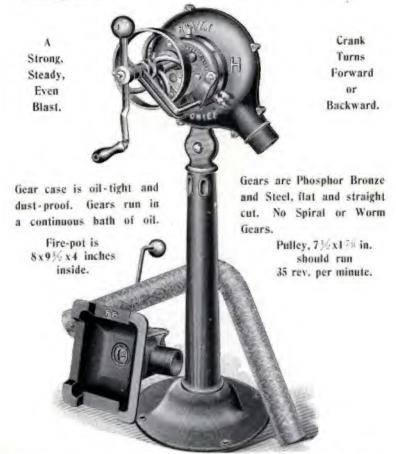
Can be furnished to operate with the right arm, for left-handed smiths, when desired.

PRICE, complete as shown . . . \$28.00

FOR LIST OF REPAIRS, SEE PAGE 111.

# Royal "Hand and Power" Blower

In this machine we combine Hand and Pulley Power. One pulley only is used, but so constructed as that it is both a **tight** and **loose** pulley. No shifting of belt



Fan, 12 inches. Height, 47 inches. Weight, 145 pounds.

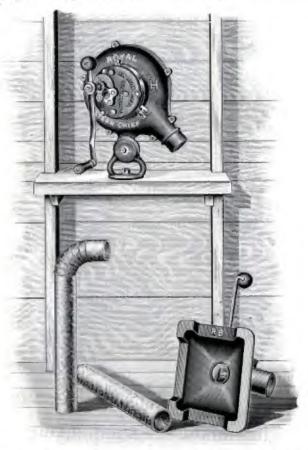
The neatest Combined Hand and Power Blower on the market.

PRICE, complete as shown . . . \$35.00

FOR LIST OF REPAIRS, SEE PAGE 111.

# Royal "Bench" Blower

To accommodate those who do not have room for a Blower with stand, or those who prefer to place a Blower on a shelf or bench, we have arranged the Royal Blower with a bench stand.



Fan, 12 inches. Crank Turns Forward or Backward. Royal Fire-pot Tuyere Iron. Needs no Clay. Size 8 x 9 1/4 x 4 inches inside.

PRICE With Tuyere (as illust'd), weight, 100 lbs. \$25.00 Without Tuyere, weight, 50 lbs. 21.00

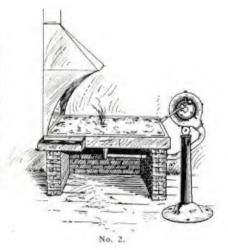
FOR LIST OF REPAIRS SEE PAGE 111.

# AS TO THE POSITION



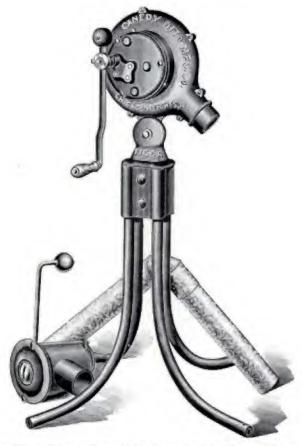
in which the Royal Blower should be placed to the forge, no absolute, unchangeable position is required. The crank turns to right or left, forward or backward, and it is largely a matter of choice with the smith. As few elbows and turns in the piping as possible is best. Illustration No. 1 shows the most popular position, and the pipe as regularly furnished is so intended.

For left-handed smiths, with whom it is necessary to operate the blower with the right arm, a different shape of piping and reversed tuyere iron is furnished, permitting the blower to be placed as shown in illustration No. 2. This style of piping and tuyere is only furnished when specially asked for.



# Tiger Blower

Cut Gears, Oil-Tight and Dust-Proof Gear Case. Crank turns forward or backward. A good, serviceable article.



The Tiger Blower is made by us to meet the demand for a blower of ordinary construction and less expensive than our higher and better grade of "Royal" Blowers. It gives a good blast, and is neatly finished.

Fan, 1112 inches.

Weight, 95 pounds.

PRICE

\$20.00

# Western Chief Blowers

In Sizes A, B, C, D, E, F and G.

The cuts on the following pages represent our new and improved Steel Frame Blowers—the best, the strongest, the neatest in the world, and in this we challenge the entire field. By having a frame constructed to support the Fan from every side, and to brace each way from the bearings, it stands without trembling when operated, keeping all the bearings in line, working far easier than with a straight, upright frame, either of wood or iron.

In sizes A and D of these blowers we offer to our patrons the only practical combined crank and lever blower made. By an ingenious device we combine both motions in one machine, and at the same time each works independent of the other. When the crank works, thereby doubling the speed, the lever is idle. As soon as the crank is released it drops to the lower side, and gear wheels stop. This is the only gear motion that will stop (all gears) while the shaft still revolves. All gears are cut.

## IMPORTANT FEATURES.

Cut Gears.

Solid Angle T Steel Frame.

Compressed Steel Shafts.

The W. C. Tuyere Iron and Fire-pot, with Bowl Top and Goose Nest.

Steel Friction Clutch, positive and noiseless and also adjustable; no leathers or rachets in its construction,

The W. C. Brass Boxes and Oil Cups used throughout.

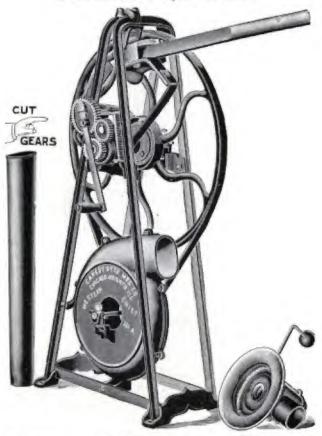
Reversible Nose to Fan Case, for turning the blast to right or left, as desired.

A, B, C and G have 1614-inch Fan. D, E and F have 1414-inch Fan.

# Western Chief Blower Size A

(Both Crank and Lever Movement.)

NO BELLOWS THE EQUAL OF THIS.



Fan, 1615 inches.

Fly Wheel, 27 inches.

Weight, 190 pounds.

It is equipped throughout with Brass Boxes and Oil Cups and has Noiscless, Adjustable Steel Friction Clutch. Can be furnished to operate with right arm for left-handed smiths, when desired.

PRICE -

\$32.00

Power Attachment (Pulleys, 71/4 x 13/4 inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 131.

# Western Chief Blower Size B

(Lever Movement Only.)

NO BELLOWS THE EQUAL OF THIS.



Fan, 1635 inches. Fly Wheel, 27 inches.

Weight, 180 pounds.

Is equipped throughout with Brass Boxes and Oil Cups, has Noiseless, Adjustable Steel Priction Clutch. Can be furnished to operate with right arm for left-handed smiths, when desired.

PRICE

\$27.00

Power Attachment (Pulleys, 71/2 x 13/4 inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 131.

# Western Chief Blower Size C

(Crank Movement Only.)
NO BELLOWS THE EQUAL OF THIS.



Fan, 161/2 inches.

Fly Wheel, 27 inches.

Weight, 165 pounds.

It is equipped throughout with Brass Boxes and Oil Cups. As soon as crank is released it drops to lower side and gear wheels stop. Can be furnished to operate with right arm for left-handed smiths, when desired.

PRICE . .

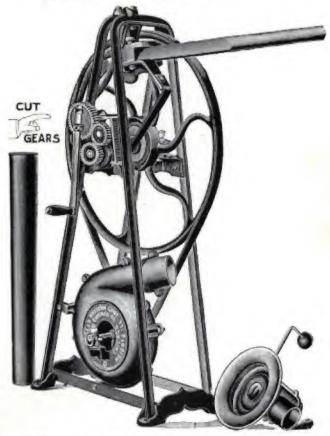
\$27.00

Power Attachment (Pulleys, 71/4 x 11/4 inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 131.

# Western Chief Blower Size D

(Both Crank and Lever Movement.)
NO BELLOWS THE EQUAL OF THIS.



Fan, t41; inches.

Fly Wheel, 27 inches.

Weight, 185 pounds.

Is equipped throughout with Brass Boxes and Oil Cups and Noiseless, Adjustable Steel Friction Clutch. It has both crank and lever movement, which work independent of each other.

PRICE

\$28.50

Power Attachment (Pulleys, 75/x 13/ inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 133.

# Western Chief Blower Size E

(Lever Movement Only.)
NO BELLOWS THE EQUAL OF THIS.



Fan, 141/2 inches. Fly Wheel, 27 inches. Weight, 175 pounds.

Is equipped throughout with Brass Boxes and Oil Cups and has Noiseless, Adjustable Steel Friction Clutch.

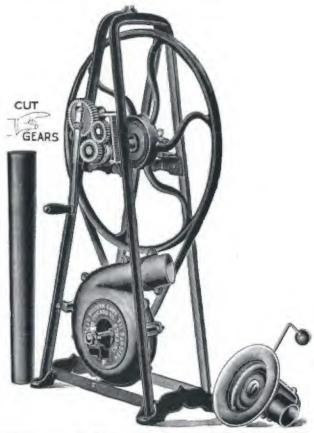
Power Attachment (Pulleys, 71/2x1% inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS SEE PAGE 133.

# Western Chief Blower Size F

(Crank Movement Only.)

NO BELLOWS THE EQUAL OF THIS.



Fan, 141/2 inches.

Fly Wheel, 27 inches.

Weight, 160 pounds.

It is equipped throughout with Brass Boxes and Oil Cups. As soon as crank is released it drops to lower side, and gear wheels stop.

PRICE

\$23.50

Power Attachment (Pulleys, 71/x1)/2 inches) \$2.50 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 133.

# Western Chief Blower Size G

(Crank Movement Only.)

THE ONLY SUCCESSFUL BIG-WHEEL BLOWER.



Fan, 161/2 inches. Fly Wheel, 36 inches. Weight, 180 pounds.

Pipe and Tuyere Iron furnished with every Machine.

A very powerful blast. By the use of countershaft, this 36-inch Wheel runs the Fan at same speed as other 48 inch wheel blowers, and also admits of looser belts without slipping. It takes but little room and runs very easily. Is equipped throughout with Brass Boxes and Oil Cups. The crank is adjustable (long or short) to suit operator's arm. Can be furnished to operate with right arm for left-handed smiths, when desired.

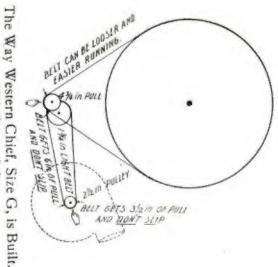
PRICE

\$35.00

FOR LIST OF REPAIRS, SEE PAGE 135.

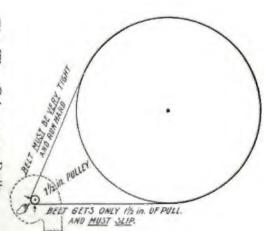
# THE RIGHT AND WRONG PRINCIPLE

As Applied to Big-wheel Blowers



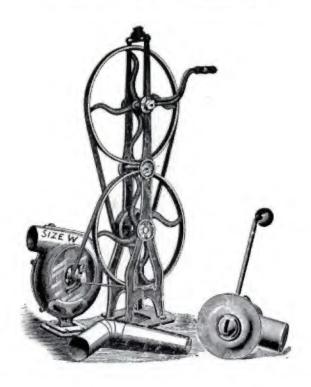
The Way Others are Built.

(With Countershaft.)



# Just a Common Blower

We call it simply "SIZE W"



Fan, 16 inches.

Weight, 160 pounds.

PRICE (complete as illustrated)

\$19.00

It is made with crank movement only. It is not modern nor up to date in any respect, and no special guarantee beyond ordinary adaptability is placed upon it.

# Royal Fire-pot Tuyere Iron

A large, heavy, solid iron Fire-pot, with side and center blast Tuyere Ball.



Measures 8 x 9 1/2 x 4 inches inside.

Weight, 50 pounds.

Diameter of Inlet,
3 inches.

PRICE . \$5.00

NEEDS NO

# Western Chief Tuyere Iron



This view shows the Extension Top or Bowl as applied to the Tuyere Iron with the Goose Nest off. In this Bowl the fire clay is built up in the usual manner, making a large, roomy, perfect fire-pot.

This view shows the Tuyere Iron after the Goose Nest is placed in position. This Nest rests on the clay to prevent its falling or crumbling, and protects it from all damage while working in the fire.

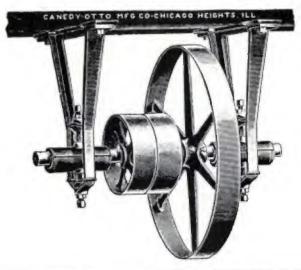


Weight, 40 pounds.

Diameter of inlet, 3 inches.

# Western Chief Countershafts

For Pressure Blowers, Etc.



SIZE	Driving Pulley		Tight and La	oose Pulleys	Diameter	*** * * * *	Date 4.23.82
	Diameter	Width	Diameter	Width	of Shaft	Weight	PRICE
P 1 P 3 P 5	1034 in. 14 "	2 ½ in. 2 ¼ 3 ½	4 in. 6 ** 7 **	2 in. 24/ ii 34/ **	¾ in.	50 lbs. 60 '' 75 ''	\$ 8.00 12.00 16.00

# Western Chief Cast-Iron Blast Gates



Outside Diameter	Weight	PRICE		
2½ inches	3 pounds	\$1.25		
3	5 84	1.50		
1 11	6 11	1.75		
136	916 11	2.00		
5	11 "	2.25		
6 "	15 "	2.50		
71. "	1856 **	3.25		
8 11	23 11	3.50		

## Western Chief Power Blowers

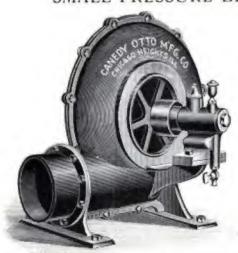
## FAN BLOWER No. F2

This is a light, neat, power Fan Blower, very desirable for ventilating purposes, and has capacity for two or three forge fires. Suitable for light belting and ordinary use. Has 1¼-inch pulley for belt connections.

Size,			. 16	il inches
Weight, .				55 lbs.
Revolutions			1,500	to 2,000
Price,		1		\$13.00



## SMALL PRESSURE BLOWERS



For Forge Fires, Etc.

These Blowers are adapted to forge fires and small, light cupola work. They are very strong and durable, smooth running, and handsome in appearance. Sizes P3, P4 and P5 have grease cup in addition to oil cup, so that should oil cup run dry the grease cup will continue to lubricate and prevent heating. Built for service.

No. of Blower.	Height in inches.	Diameter of Inlet	Durmeter of Outlet.	Diameter of Pulley.	Face of Pulley.	Revolutions per min 2-or Blast for Boiler Fires.	Revolutions per min. 4-az. Blast lat Forge Fires.	No. of Forge Fires.	Sq. ft. of Boiler Grate surface supplied by Blower.	Weight, Ds.	H. P. Kequired, about	PRICE.
P 1	10	314	234	136	114	3075	4640	1	2	15	L	\$12.00
P 2 P 3	10 15	436	434	1% 3 3	13	3000	4000	2	5	15 35	55	18.00
P3	18	532	437	3	2	2600	3600		25	50	1	20.00
P 4	20	614	5%	3 1/2	2 2%	2300	3200	5	S	70	114	28.00
P 5	24	7	736	43%	334	1928	2680	-	10	105	134	33.00



# NOTICE

DON'T leave us to guess at what is wanted on your orders.

If a FORGE, that is listed with and without Hoods, Tanks, etc., state the way you want it.

If a BLOWER, be explicit on essential points: Names and Sizes.

If a DRILL, state whether wanted with or without pulleys; also whether CHUCK shall be with 1/2-inch or 1/4-inch hole.

A little care in these matters will save delays, errors, disappointments.

# Western Chief DRILLS

Pages 94 to 109

(Repair List in Back of Book.)

The most complete line of Post Drills (when quality, desirability and general value are considered) that is upon the market.

# Western Chief Drill No. 0<sup>1</sup>/<sub>2</sub>

A SINGLE GEARED, HAND-FEED DRILL.



Our No. 0½ Drill is a Neat, Durable Article, but is Hand-feed Only.

Bores O to 3, inch.

Drills to center of 12-inch Circle.

Up and Down run of Spindle, 214 inches.

Up and Down run of Table, 91/2 inches.

Greatest distance from Table to Spindle, g 1/2 inches.

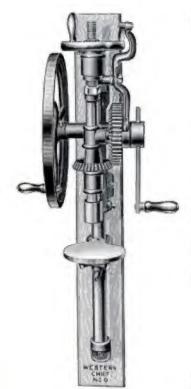
Weight, 50 pounds.

Light Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

BEST MATERIALS IN ITS CONSTRUCTION.

FOR LIST OF REPAIRS, SEE PAGE 137.

NEAT, LIGHT AND DURABLE.



Our No. 0 Drill is Simple, yet Complete, and for Light Work is Very Satisfactory.

Self-feed, Changeable Speed.

Fast and Slow speed.

Bores O to 1/4 inch.

Drills to center of 12-inch Circle.

Up and Down run of Spindle, 234 inches.

Up and Down run of Table, 9 1/2 inches.

Greatest distance from Table to Spindle, 916 inches.

Takes bits with 1/2-inch shanks.

Weight, 75 pounds.

Light Wheel Rims can be drilled by removing table and using the forked support as a wheel holder.

THE BEST MATERIAL IS USED IN ITS CONSTRUCTION.
STEEL MANDREL, SHAFTS AND FEED SCREW.

PRICE

\$7.50

FOR LIST OF REPAIRS, SEE PAGE 137.

## A RELIABLE DRILL AT THE LOWEST COST



Two speeds, Fast and Slow. Self-feed, Changeable Speed.

Drills to center of 15-inch Circle.

Bores from 0 to 114 inches.

Up and Down run of Spindle, 3 inches.

Up and Down run of Table, ro¼ inches.

Greatest distance from Spindle to Table, 13 inches.

Size of Pulleys for power, 8 x 21/4 inches, should run 200 revolutions per minute.

Spindle bored for 1/2 or 1/4 inch Shank Bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 110 pounds.

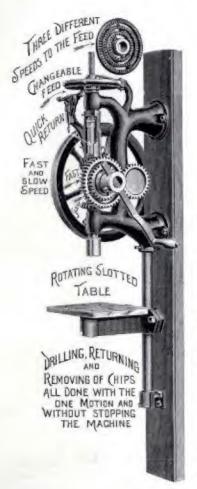
Light Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

PRICE

\$10.00

Power attachment, \$2.00 net extra.

FOR LIST OF REPAIRS, SEE PAGE 139.



## A Changeable Speed, Changeable Feed, Quick Return Drill

Drills to center of 15-inch Circle.

Bores 0 to 11/2 inches.

Up and Down run of Spindle, 23/4 inches.

Up and Down run of Table, 13 inches.

Greatest distance from Table to Spindle, 13 inches.

Size of Pulleys for Power, 8 x 2 1/4 inches. Should run 200 revolutions per minute.

Spindle bored for 1/2 or 1/4-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 130 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

PRICE

\$15.00

Power Attachment, \$2.00 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 141.

A First-class Drill at a very Reasonable Price.



Self-feed, with three different speeds to feed: slow, medium and fast.

Double Geared for slow or fast speed.

Slotted, Rotating, Swinging Table.

Drills to center of 15-inch Circle.

Bores o to 115 inches.

Up and Down run of Spindle, 31/4 inches.

Up and Down run of Table, 13 inches.

Greatest distance from Table to Spindle, 13 inches.

Size of Pulleys for power, 8 x 21% inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 125 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

PRICE

\$14.50

Power Attachment, \$2.00 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 141.

Not a Cheap, Babbitted Affair, but a Successful, Self-feed Drill, Built on Mechanical Principles.



Automatic Self-feed.

Drills to center of 141/2-inch Circle.

Bores 0 to 1 inch.

Up and Down run of Spindle, 31/2 inches.

Up and Down run of Table, 11 inches.

Greatest distance from Table to Spindle, 10 % inches.

Size of Pulleys for Power, 8 x 21% inches. Should run 200 revolutions per minute.

Spindle bored for 1/2 or 11-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 95 pounds.

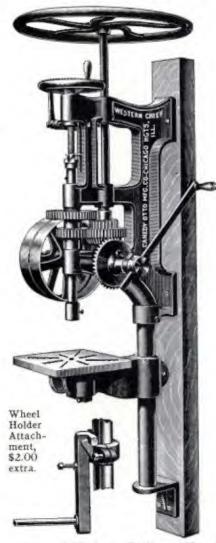
Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

PRICE

\$10.00

Power Attachment, \$2.00 Net Extra.

FOR LIST OF REPAIRS, SEE PAGE 143.



CUT GEARS ONLY USED IN THIS DRILL.

## DESCRIPTION.

Automatic Self-feed.

Fast and slow speed, instant change.

Drills to center of 21-inch Circle.

Bores 0 to 1 1/4 inches.

Up and Down run of Spindle, 5 inches.

Up and Down run of Table, 161; inches.

Greatest distance from Table to Spindle, 1914 inches.

Size of Pulleys for Power, 101 x 212 inches. Should run 175 to 180 revolutions per

Spindle bored for 15 or 11-in. shank bits. ALWAYS STATE SIZE WHEN ORDERING.

## Weight.

Hand power, 275 pounds. Pulley power, 295 pounds.

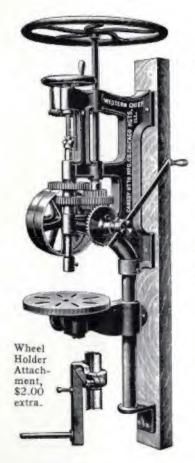
The shaft on this drill (when ordered hand power) is left extended to receive pulleys any time thereafter.

Wheel Rims can be drilled by removing table and using the forked support as a wheel A special Wheel holder. Holder Attachment, as illustrated, is furnished, when ordered, for \$2.00 extra

PRICE Without Pulleys, Hand Power only \$33.50
With Pulleys (as illustrated) \$37.50

FOR LIST OF REPAIRS, SEE PAGE 147.

CUT GEARS ONLY, USED IN THIS DRILL.



### DESCRIPTION.

Automatic Self-feed.

Fast and slow speed, instant change.

Drills to center of 16-inch Circle. Bores O to 1 16 inches.

Up and Down run of Spindle, 4 inches.

Up and Down run of Table, 151/4 inches.

Greatest distance from Table to Spindle, 16 inches.

Size of Pulleys for Power, 10 1/4 x 2 1/2 inches. Should run 175 to 180 revolutions per minute.

Spindle bored for 1/4 or 11-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand power . . 215 lbs. Weight, Pulley power . . 235 lbs.

The shaft on this drill (when ordered hand power) is left extended to receive pulleys any time thereafter.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder. A Special Wheel Holder Attachment, as illustrated, is furnished, when ordered, for \$2.00 extra.

PRICE With Hand and Pulley Power Attachments (as illustrated) 31.50

FOR LIST OF REPAIRS, SEE PAGE 147.

Cut Gears. Back Geared. Self-feed. Changeable Speed.



Drills to center of 19-inch Circle. Bores 0 to 1 1/2 inches.

> Up and Down run of Spindle, 4 inches. Up and Down run of Table, 111 inches.

Greatest distance from Table to Spindle, 131/2 inches.

Size of Pulleys, 8 x 2 1/2 inches. Should run 200 revolutions per minute.

Spindle bored for 1, or 11-in. shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight.

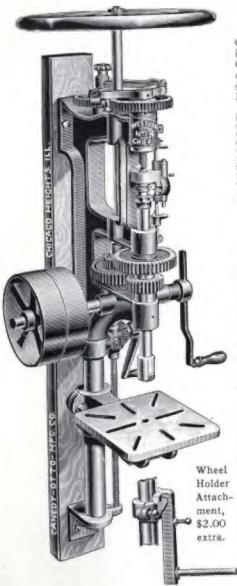
Hand Power, . . . 180 pounds. Hand and Power, . 190 pounds.

It has two speeds, Fast and Slow, and for heavy drilling the slow speed is instantly obtained by inserting the crank handle in rim of fly wheel.

The Shaft on this Drill (when ordered Hand Power) is left extended, to receive Pulleys at any time thereafter.

Wheel Rims can be drilled by removing the table and using the forked support as a Wheel Holder. A special Wheel Holding Attachment, as illustrated, is furnished, when desired, for \$2.00 extra.

FOR LIST OF REPAIRS, SEE PAGE 145.



## DESCRIPTION.

Straight and Bevel Gears are Cut. Fast and slow speed, instant change. Horizontal, Gear driven, positive self-feed, changeable instantly to fast, slow or medium, as desired. Raise and lower device to table.

It has automatic quick return, allowing rapid withdrawal of the bit at will, without stopping or reversing machine. Or, it can be set to drill any depth desired and will automatically (whether running by power or hand) reverse itself, withdraw the bit and start drilling again and again indefinitely, all without stopping the motion of the machine, or turning it backward. This feature is independent of Drill, and need not be used unless desired.

Drills to center of 21-inch Circle. Bores, 0 to 1% inches.

Up and Down run of Spindle, a inches.

Up and Down run of Table, 16% inches.

Greatest distance from Table to Spindle, 18 inches.

Size of Pulleys, 10% x 2% inches. Should run 175 to 180 revolutions per minute.

Spindle bored for 1/2 or 1/1/2-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight (Hand Power), . . 295 lbs. Weight (Hand and Power), 315 lbs.

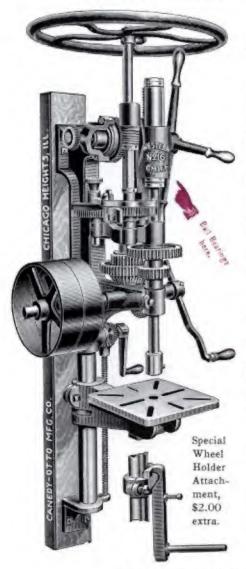
Wheel Rims can be drilled by removing table and using the lorked support as a wheel holder. A special Wheel Holder Attachment, as illustrated, is lurnished, when ordered, for \$2.00 extrs.

The Shait on this drill (when ordered Hand Power) is left extended, to receive pulleys at any time thereafter.

### PRICE

Hand Power only . \$38.50 Both Hand Power and Pulley Power (as illustrated) . 42.50

> FOR LIST OF REPAIRS, SEE PAGE 149.



A Post Drill with the fine features of Machine Shop Floor Drills.

Straight and Bevel Gears are cut.

Fast and slow speed, instant change.

Hand Lever Feed, also Horizontal Gear-driven, positive self-feed, changed to fast, slow or medium speed instantly. These feeds work independent of each other, and bit is lifted quickly.

Raise and lower device to Table.

Drills to center of 24-inch Circle.

Bores 0 to 116 inches.

Up and Down run of Spindle, 8 1/4 inches.

Up and Down run of Table, 15% inches.

Greatest distance from Table to Spindle, 181/4 inches.

Size of Pulleys, 10 1/4 x 2 1/4 inches. Should run 175 to 180 revolutions per minute.

Spindle bored for 1/2 or 11-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight (Hand Power), 340 lbs. Weight (Hand and Power), 360 lbs.

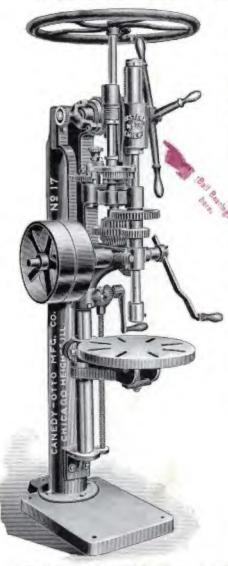
Wheel Rims can be drilled by removing table and using the forked support as a wheel holder.

When ordered hand power only, the shaft is left extended, so that Pulleys may be placed at any time.

## PRICE

Hand Power only . . \$42.50 With Polleys, as illustrated 46.50

FOR LIST OF REPAIRS, SEE PAGE 151.



A Finished Floor Drill, both Hand and Pulley Power.

Straight and Bevel Gears are cut.

Fast and slow speed, instant change.

Hand Lever Feed, also Horizontal, Gear Driven, Positive self-feed, changed to fast, slow or medium instantly. These feeds work independently of each other, and bit is lifted quickly.

Raise and lower device to Table.

Drills to center of 24-inch Circle.

Bores 0 to 136 inches.

Up and Down run of Spindle, 81% inches.

Up and Down run of Table, 151/2 inches.

Greatest distance from Table to Spindle, 181/2 inches.

Height of Machine, 71 inches.

Floor space, 15 x 26 inches.

Size of Pulleys, 10 1/2 x 2 1/2 inches. Should run 175 to 180 revolutions per minute.

Spindle bored for 1/2 or 11-inch shank bits. ALWAYS STATE SIZE WHEN OR-DERING.

When specially ordered we will bore Spindle to receive No. 3 Morse Taper.

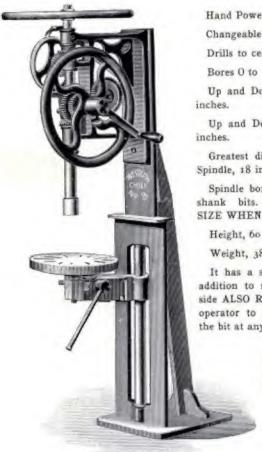
Weight, 560 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder. Special Wheel Holder Attachment can be furnished for \$2.00 net.

PRICE, Hand and Pulley Power (as illustrated) .
FOR LIST OF REPAIRS, SEE PAGE 151.

\$65.00

A Self-feed Hand Drill, Designed for Use Anywhere upon the Floor; no Post or Wall to Attach It to Necessary.



Hand Power only.

Changeable Self-feed.

Drills to center of 23-inch Circle.

Bores 0 to 112 inches.

Up and Down run of Spindle, 5

Up and Down run of Table, 20

Greatest distance from Table to Spindle, 18 inches.

Spindle bored for 12 or 11-inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Height, 60 inches.

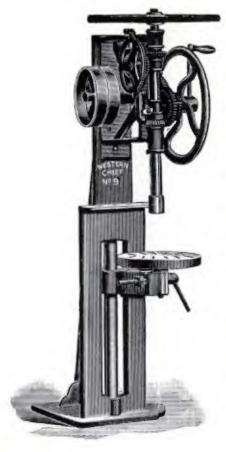
Weight, 380 pounds.

It has a slotted table, which in addition to swinging from side to side ALSO ROTATES, enabling the operator to bring his work under the bit at any place desired.

> A second speed for heavy work is readily obtained by inserting the crank handle into rim of fly wheel.

#### Western Chief Drill No. 9

Combined Hand and Power Self-feed Floor Drill.



Both Hand and Pulley Power.

Changeable Self-feed.

Drills to Center of 23-inch Circle.

Bores 0 to 1 1 inches.

Up and Down run of Spindle, 5 inches.

Up and Down run of Table, 20 inches.

Greatest distance from Table to Spindle, 18 inches.

Spindle bored for 15 or 11-inch shank bits. ALWAYS STATE SIZE WHEN OR-DERING.

Height, 60 inches.

Weight, 390 pounds.

It has a slotted table, which in addition to swinging from side to side ALSO ROTATES, enabling the operator to bring his work under the bit at any place desired.

A second speed for heavy work is readily obtained by inserting the crank handle into rim of fly wheel.

PRICE

\$35.00

#### Western Chief Drill Chucks

#### Nos. 1 and 2

Makes it possible to use bits having 1/2-inch shanks in a drill, the mandrel of which is bored for 1/2-inch, and Vice Versa.



When Drill Spindles are bored ½-inch, and bits on hand are ‡‡-inch shank; or spindle is bored ‡‡-inch and bits on hand have ½-inch shank; or you have bits on hand with both size shanks, these chucks provide a way out of the trouble.

CHUCK No. 1		
Arbor 1/2-inch, Hole 4 1-inch		\$2.00
CHUCK No. 2		
Arbor 44-inch, Hole 1/2-inch .		\$2.00

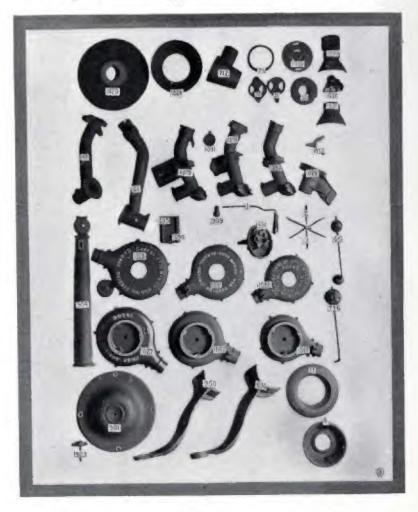
# Repairs

FOR ALL

# FORGES BLOWERS and DRILLS

will be found in following pages

### Royal Forges and Blowers





New Style



New Style



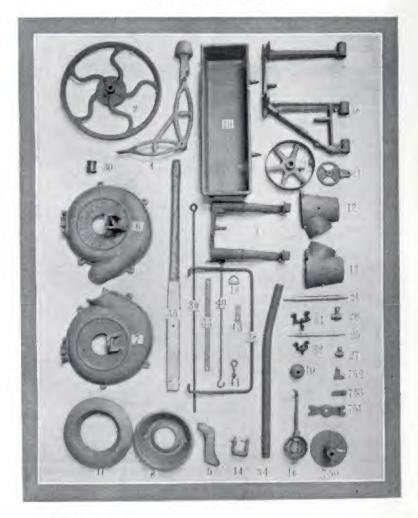
New Style

#### Repair List of Royal Forges and Blowers

Vo.	When ordering, state Number and Name of Part Wanted.		
1	Crank Handle, all Forges and Blowers	0	90
2	Fan, fits Royal Blower, also Nos. 8, 9, 10, 15, 20, 30, 35, 99, 100 and 200 Forges.		75
3	Fan, Nos. 40, 50, 55, 60, 70, 75, 80, 102, 103, 104 & 105 Forges	1	50
8	Fire-oot, fits Nos. 100 and 200 Forges (Old Style)	1	00
9	Square Fire-pot (New Style), fits Nos. 8, 9, 10, 15, 20, 30		
	and 25 Forges	+	00
11	Goose Nest, fits Nos. 100 and 200 Forges (Old Style)	1	50
20	Ash Door, fits Nos. 10, 15, 20, 30, 35, 100 and 200 Forges		25
21	Ash Door, fits Nos. 10, 13, 20, 30, 35, 100 and 200 Forges.		25
59	Tuvere Cap. fits Nos. 102, 103, 104, 105 Forges.		75
63	Blower Tube, bits Nos. 102, 103 Forges	4	00
66	Tovere Eall, fits Nos. 102, 103, 104, 105 Forges		50
68	Duck Nest, fits Nos. 102, 103, 10334 Forges		75
113	Blower Tube, fits Nos. 104, 105 Forges	4	00
630	Blower Support, fits Nos. 8 and 9 Forges	23	00
711	Tuyere Ring, Nos. 10, 15, 20, 30, 35, 99, 100 & 200 Forges.		40
712	Ash Pot. fits Nos. 10, 15, 20, 30, 35, 99, 100 and 200 Forges.	3	25
716	Tuyere Ball, Nos. 10, 15, 20, 30, 35, 99, 100 & 200 Forges	61	50
901	Base, for Royal Blower	-	00
904	Pedestal, for Royal Blower	the	50
909	Handle Hub, fits all Royal Forges and Blowers		20
923	Nut, connecting Pedestal and Base, Royal Blower.		20
934	Gears with Casing and Yoke Complete, fits Royal Blower and all Royal Forges except No. 76.	10	00
950	Blower Support, fits Nos. 99, 100 and 200 Forges	-3	00
1001	Back Fan Side, fits Nos. 10, 15, 20, 30 and 35 Forges	- 3	.00
1002	Front Fan Side, fits Nos. 10, 15, 20, 30 and 35 Forges	3	50
1007	Blower Tube Support, fits Nos. 10, 15, 20, 30 & 35 Forges.		60
1020	Tuvere Plate, fits Nos. 10, 15, 20, 30, 35 Forges (Old Style)	13	50
1024	Fire-not fits Nos. 10, 15, 20, 30, 35 Forges (Old Style)	1	00
1025	Square Fire-pot (New Style), fits Nos. 99, 100 & 200 Forges		0.0
1026	Back Fan Side, Royal Blower, also 8, 9, 99, 100 & 200 Forges	3	
1027	Front Fan Side, Royal Blower, also 8, 9, 99, 100 & 200 Forges	- 11	
1028	Blower Tube, fits Nos. 10, 15, 20, 30 and 35 Forges	13	50
1078	Blower Tube, fits Nos. 41 and 61 Forges	4	40.00
1079	Blower Tube, fits Nos. 40, 50, 55, 60, 70 and 75 Forges	4	
1080	Blower Tube, fits Nos. 80, 81 and 83 Forges	4	00
1081	Ash Door, 40, 50, 55, 60, 70, 75, 80, 102, 103, 104 & 105 Fgs		25
1086	Back Fan Side, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81, 82.		1515
	102, 103, 104, 105 Forges	- 31	00
1087	Front Fan Side, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81, 82, 102, 103, 104, 105 Forges	1	50
1090	Leg Bracket (Long), fits Nos. 41 and 61 Forge	1	
1091	Leg Bracket (Short), fits Nos. 41 and 61 Forge		00
1092	Leg Bracket (Inside), fits Nos. 41 and 61 Forge		50
1095	Leg Bracket (Front), hts Nos. 10, 50, 55, 60, 70, 75 Forge.		75
1096	Leg Bracket (Back), fits Nos. 40, 50, 55, 60, 70, 75 Forge.		75
1099	Tuyere Cap, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81 & 82 Fgs.		75
POFE	For general Forge parts of Forges Nos. 8 and 9, see repairs for BB& XEB meral Porge parts of Nos. 99, 300 and 200, see repairs for AA Forges. eneral Forge parts of Nos. 102 and 103, see repairs for Nos. 2 and 3 Forges.	For	rges.

### Western Chief Forges

Nos. 1 and 11/2





New Style.

#### Repair List of Western Chief Forges Nos. 1 and 11/2

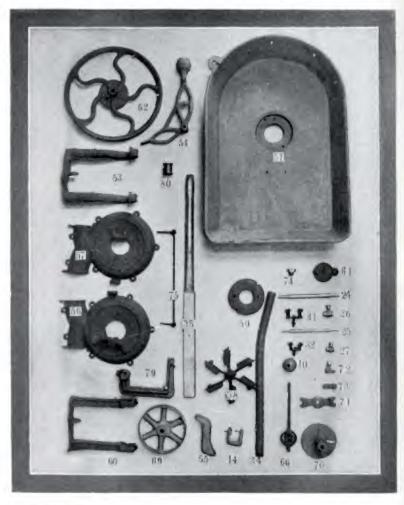
When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of Part.	L'T	ice.
1	Hearth (not illustrated), state if for round or square fire-		
	pot	\$12	
-	Hood (not illustrated)		25
2	Fly Wheel		50
3	Wheel Hanger	9	00
4	Lever Casting	1	75
5	Lever Bracket		35
6	Fan Side (Pulley Side)	13	50
7	Fan Side Fire-pot (Old Style).	2	50
8	Fire-pot (Old Style)	1	0.0
10	Ball		10
11	Goose Nest (Old Style)	1	50
12	Ash Pot, Right		50
13	Ash Pot, Left		50
14	Handle Loop		30
16	Tuyere Ball		50
18	Finger Pull		10
19	Water Tank		25
21	Ash Door		25
23	Fan (not illustrated)		50
24	Fly Wheel Shaft		50
25	Fan Shaft		50
26	Brass Box and Cup (Fly Wheel Shaft)		90
27	Brass Box and Cup (Fan Shaft)		80
28	Power Hanger		50
29	Power Pulley		75
30	Fan Pulley.		30
31	Large Loop (Fly Wheel Shaft)		50
33	Small Loop (Fan Shaft)		40 15
34	Wheel Bracket Brace		19
35	Leg		50
38	Handle		35
39	Side Rod.		25
40	Side Rod Support		40
41	Lever Rod.		10
43	Lever Rod Eye		10
750	Clutch Hub These	-	25
751	Clutch Lever Form		75
752	Clutch Dog Clutch	,	15
753	Clutch Lever Form Clutch Dog Clutch Clutch Piece Complete.	,	10
1025	Square Fire-pot (New Style)		00

Long Belts, \$1.00. Pull Straps, 40 cents each.

#### Western Chief Forges

Nos. 2, 3, 31/4 and 31/2





#### Repair List of Western Chief Forges

Nos. 2, 3, 31/4, 31/2

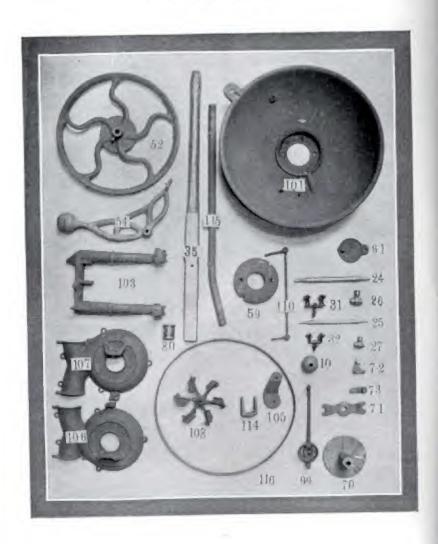
#### When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Pr	ice.
-	Shield (Na 2 Forge), not illustrated\$	0	75
_	Hood (Nos. 3 and 31/2 Forge), not illustrated	3	00
10	Ball		10
14	Handle Loop		30
24	Fly Wheel Shaft		50
25	Fan Shaft		50
26	Brass Box and Cup (Fly Wheel Shaft)		90
27	Brass Box and Cup (Fan Shaft)		80
31	Large Loop (Fly Wheel Shaft)		50
32	Small Loop (Fan Shaft)		40
34	Leg		30
35	Handle		50
51	Hearth	6	00
52	Fly Wheel	2	25
53	Wheel Hanger	13	00
54	Lever Casting	1	50
55	Lever Bracket.		30
56	Fan Side (Pulley Side)	13	25
57	Fan Side	2	25
58	Fau	1	25
59	Tayere Cap		75
60	Power Hanger.	2	00
61	Ash Door.		20
66	Tuyere Ball		50
68	Ducks Nest	I	75
69	Power Pulley	1	75
70	Clutch Huh These	-	25
71	Tutch Lever Form		75
72 73	Clutch Dog Clutch		15
74	Clutch Piece Complete.		10
75	Brass Box, Old Style		80
79	Lever Rod		40
80	Shifter Bracket		90
G/L	Fan Pulley		300

Long Belts, 75 cents. Pull Straps, 40 cents each.

### Western Chief Forges

Nos. 4, 5 and 51/2



## Repair List of Western Chief Forges

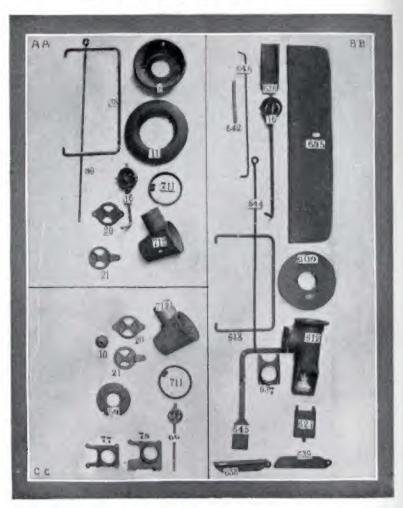
Nos. 4, 5, 51/2

#### When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of Part.	L'TI	CC.
_	Shield (No. 4 Forge), not illustrated	8 0	60
_	Hood (No. 5 Forge), not illustrated	2	75
_	Hood (No. 51/2 Forge), not illustrated	4	00
10	Ball		10
24	Fly Wheel Shaft		50
25	Fan Shaft		50
26	Brass Box and Cup (Fly Wheel Shaft)		90
27	Brass Box and Cup (Fan Shait)		SO
31	Large Loop (Fly Wheel Shaft)		50
32	Small Loop (Fan Shaft)		40
35	Handle		50
52	Fly Wheel	2	25
54	Lever Casting	1	50
59	Tuyere Cap		75
61	Ash Door		20
70	Clutch Hub These	1	25
71	Clutch Lever. Form Clutch Dog. Clutch Clutch Piece. Complete.		75
72	Clutch Dog Clutch		15
73	Clutch Piece Complete.		10
80	Fan Pulley		30
99	Tuyere Ball		50
101	Hearth	-	00
103	Wheel Hanger	-	00
105	Lever Bracket		25
106	Fan Side (Pulley Side)		25
107	Fan Side	2	25
108	Fan	-	25
110	Lever Rod		40
114	Handle Loop		30
115	Leg		30
116	Leg Ring		40

Long Belts, 75 cents. Pull Straps, 40 cents each.

# Western Chief Forges Sizes AA, BB, XBB and CC





New Style.



New Style. 115



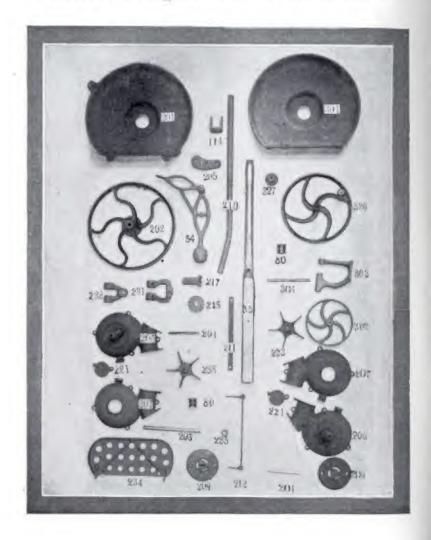
New Style.

#### Repair List of Western Chief Forges Sizes AA, BB, XBB and CC

When ordering, give Name of Forge and Number of Part Wanted.

No.	AA		
1	Hearth (not illust'd; state if for Round or Square Fire-pot)	12	
	Hood (not illustrated)	3	25
19	Water Tank (not illustrated)		25
8	Fire-pot (Old Style)	-	00
11	Goose Nest (Old Style)	1	50
16	Tuyere Ball		50
20	Ash Door		25
21	Ash Door		25
34	Leg (not illustrated)		30
38	Side Rod		35
39	Side Rod Support		25
711	Tuyere Ring		40
712	Ash Pot		25
1025	Square Fire-pot (New Style)	13	00
	CC		
2.5	Hearth (not illustrated)	15	00
51	Hood (not illustrated)		00
10	Hall	1.0	10
10	Ash Door		25
	Ash Door		25
21 34	Leg (not illustrated)		30
59	Tuvere Cap		75
66	Tuyere Ball		50
67	Pipe (not illustrated)		60
68	Duck Nest		75
77	Blast Gate, Right Side	-	50
78	Blast Gate, Left Side		60
711	Tuyere Ring		40
712	Ash Pot	1	25
1 239			111 14
	BB AND XBB		
9	Square Fire-pot (New Style)	-	00
601	Hearth, BB (not illust'd; say if for R'd or Square Fire-pot)		50
602	Hearth, XBB (not illust'd; state if for R'd or Sq. Fire-pot)		Oth
	Hood (not illustrated)		25
619	Water Tank (not illustrated)		25
634	Leg (not illustrated)	1	50
16	Tuyere Ball		50
609	Tuyere Cap (for Old Style, Round Fire-pot)		50
612	Ash Pot	3	00
621	Ash Door		50
635	Divider	1	00
636	Tank Support		50
637	Blast Gate Side		75
642	Spring		35
643	Side Rod		35
645	Side Rod Support	1	00
646	Damper	-1	40
0.50	Ash Door Rod		18.13

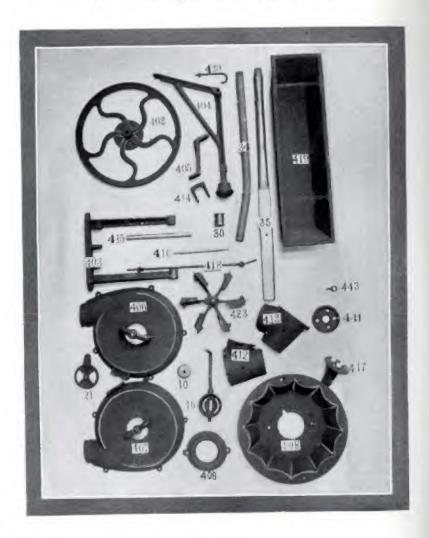
#### Hero Forges Nos. 6 and 7 Leader Forges Nos. 11, 12, 13 and 14



#### Repair List of Hero Forges Nos. 6 and 7 Leader Forges Nos. 11, 12, 13 and 14

	When ordering, give Name of Forge and Number of Part Wanted.		
No.	HERO FORGES, NOS. 6 AND 7		0.0
-	Shield (No. 6 Forge), not illustrated\$	U	(60)
	Hood (No. 7 Forge), not illustrated	-	75
35	Handle		50
54	Lever Casting	-	50
70	Clutch Hub These Form Clutch Complete.	1	25
71	Clutch Lever New Style Same as Shown		75
72	Clutch Dog on No & Western Chief		15
73	Clutch Piece 3		10
80	Fan Pulley		30
114	Handle Loop		30
201	Hearth	4	75
202	Fly Wheel	2	00
203	Fly Wheel Shaft		40
204	Fan Shaft		30
205	Lever Bracket		25
206	Fan Side (Pulley Side)	0	25
207	Fan Side		25
209	Tuyere Cap		00
210	Leg		30
211	Leg Brace		10
212	Lever Rod		40
215	Clutch (Old Style)		60
217	Hub (Old Style)		60
221	Ash Door		20
			60
231	Long Leg Bracket		50
233			60
COLUMN TO	Fan		75
234	Shelf		10
235	Washer		149
	Long Belts, 60 cents. Pull Straps, 30 cents cach.		
	LEADER FORGES, Nos. 11, 12, 13 AND 14.		20
_	Shield (No 11 Forge), not illustrated\$	0	60
-	Hood (No. 12 Forge), not illustrated	10	75
80	Fan Pulley		30
204	Fan Shaft		30
206	Fan Side (Pulley Side)	-	25
207	Fan Side		25
209	Tuyere Cap	1	00
210	Leg		30
221	Ash Door		20
233	Fan		60
301	Hearth	4	50
302	Fly Wheel	1	75
303	Wheel Hanger	1	00
304	Fly Wheel Shaft		40
326	Large Gear	1	50
327	Small Gear		30
	Leather Belt		35
	Legs (Nos. 13 and 14)		50
	Crank (not illustrated)		7.5

#### Challenge Forge No. 1c

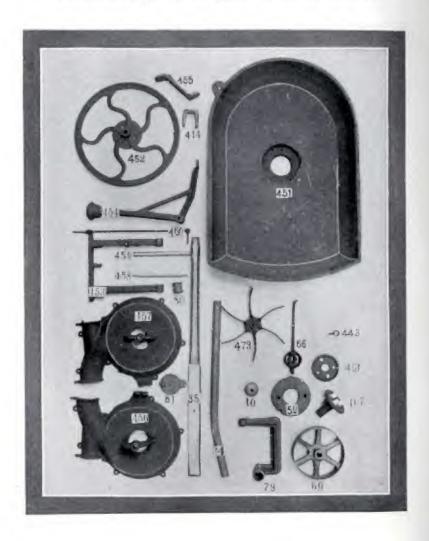


#### Repair List of Challenge Forge No. 1c

When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Pri	
-	Hood (not illustrated)	8 3	25
10	Ball		10
16	Tuyere Balt		50
21	Ash Door		25
30	Fan Polley		30
34	Leg		30
35	Handle		50
401	Hearth (not illustrated)		50
402	Fly Wheel		00
403	Wheel Hanger		00
404	Lever Casting		60
405	Lever Bracket		35
406	Fan Side (Pulley Side)		50
407	Fan Side		50
408	Fire-pot,		00
409	Tuyere Cap		75
412	Ash Pot, Right		50
413	Ash Pot, Left		50
414	Handle Loop		30
415	Fly Wheel Shaft		40
416	Fan Shaft		50
417	Clutch Hub	- 1	25
418	Lever Rod		40
419	Water Tank		00
420	Wheel Hanger Brace		25
423	Fan		50
441	Clutch Ratchet		50
443	Clutch Dog		10

#### Challenge Forges Nos. 2c and 3c

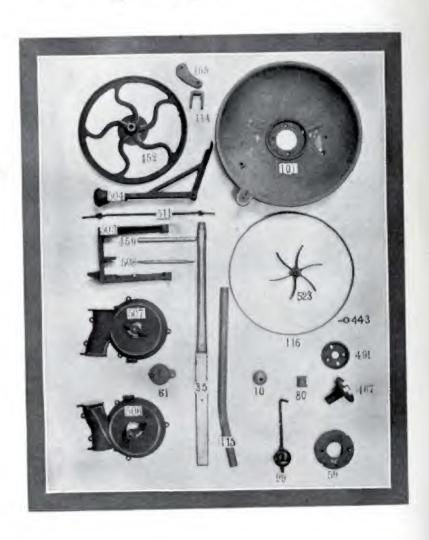


#### Repair List of Challenge Forges Nos. 2c and 3c

When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of	Part.	Price.
-	Shield (No. 2 Forge)	not illustrated	8 0 75
_	Hood (No. 3 Forge).	not illustrated	3 00
10			
34			
35			
59			
61	Ash Door		20
66		******	
69	Power Pulley		1 75
79	Shifter Bracket		90
80			
414			
443	Clutch Dog		10
451			
452	Fly Wheel		2 00
453	Wheel Hanger		1 75
454	Lever Casting		1 50
455	Lever Brackets		35
456	Fan Side (Pulley Sid	e)	2 50
457	Fan Side	* * * * * * * * * * * * * * * * * * * *	2 50
458			
459	Fly Wheel Shaft		40
460	Lever Rod		40
467	Clutch Hub		1 25
473		*******************************	
491			

#### Challenge Forges Nos. 4c, 5c and 51/2c



#### Repair List of Challenge Forges Nos. 4c, 5c and 5½c

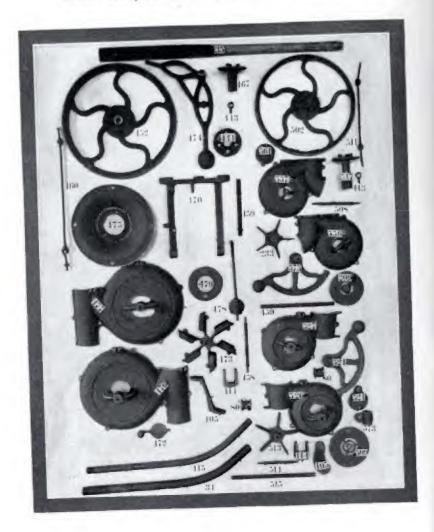
When ordering, give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Pr	ice.
_	Shield (No. 4 Forge), not illustrated	0 8	60
-	Hood (No. 5 Forge), not illustrated	2	75
-	Hood (No. 51/2 Forge), not illustrated	4	00
10	Ball		10
35	Handle		50
59	Tuyere Cap		75
61	Ash Door		20
80	Fan Pulley		30
99	Tuyere Ball		50
101	Hearth	5	00
105	Lever Bracket		25
114	Handle Loop		30
115	Leg		30
116	Leg Ring		40
443	Clutch Dog		10
452	Fly Wheel		00
459	Fly Wheel Shaft		40
467	Clutch Hub	1	25
491	Clutch Ratchet		50
503	Wheel Hanger		75
504	Lever Casting	1	50
506	Fan Side (Pulley Side)		25
507	Fan Side		25
508	Fan Shaft		50
511	Lever Rod		40
523	Fan		90

Long Belts, 75 cents. Pull Straps, 40 cents each.

## Chicago Forges

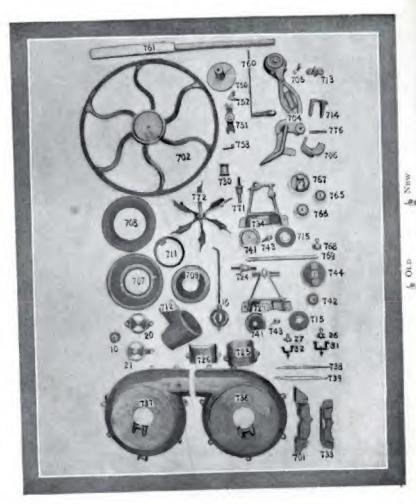
Nos. 150, 151, 152, 153, 154 and 155



#### Repair List of Chicago Forges Nos. 152 and 153 Hood (153 Forge: not illustrated)..... 2 75 30 34 Wood Handle (Fits Nos. 150, 151, 152, 153, 154 & 155 Forges) 50 35 Fan Pulley (Fits Nos. 150, 151, 152, 153, 154 & 155 Forges). 30 80 Handle Loop 114 Lever Bracket ...... 35 405 Clutch Ratchet 50 441 Clutch Dogs (Fits Nos. 150, 151, 152, 153, 154 & 155 Forges) 443 10 Fly Wheel 2 00 452 Fan Shaft 458 50 Fly-wheel Shaft ..... 40 459 Lever Rod 40 460 Clutch Hub ..... 25 467 Wheel Hanger 1 75 470 Hearth (not illustrated) 471 6 00 Aslı Door 472 Fan ..... 473 1 00 Lever Casting 50 474 Fire pot ..... 50 475 Fan Side (Pulley Side).... 476 2 50 477 Fan Side 2 50 Tuyere Ball 478 40 Tuyere Cap 479 75 Nos. 150, 151, 154 and 155 Shield (not illust'd; for Forges 150 & 154; say which Forge) 80 Hood (not illust'd; for Forges 151 & 155; say which Forge) 2 50 105 Lever Bracket 3.5 114 Handle Loop ....... 30 30 115 Tuyere Cap (Fits No. 150 and 151 only).... 50 209 Fan (Fits No. 150 and 151 only)..... 233 60 459 Fly-wheel Shaft (Fits No. 150 and 151 only)..... 40 Hearth (Not illustrated; fits 154 and 155 only) 501 3 00 1 75 502 Fly-wheel 50 508 Tuyere Cap (Fits 154 and 155 only)...... 509 60 511 Lever Rod 40 Fan (Fits 154 and 155 only)..... 513 70 Fan Shaft (Fits 154 and 155 only) 50 514 Fly Wheel Shaft (Fits 154 and 155 only) 515 40 517 Clutch Hub and Gear..... 1 25 521 Ash Door (Fits 154 and 155 only). 20 Segment Gear (Fits 154 and 155 only)...... 1 25 524 Fan Side; pulley side (Fits 154 and 155 only)...... 2 25 526 527 Fan Side (Fits 154 and 155 only) 551 Hearth (Not illustrated: Fits 150 and 151 only)...... 2 25 556 Fan Side: pulley side (Fits 150 and 151 only)..... 9 25 557 Fan Side (Fits 150 and 151 only) 20 561 Ash Door (Fits 150 and 151 only)..... 30 573 Leg Bracket Segment Gear (Fits 150 and 151 only).....

## Western Chief Blowers

Sizes A, B and C



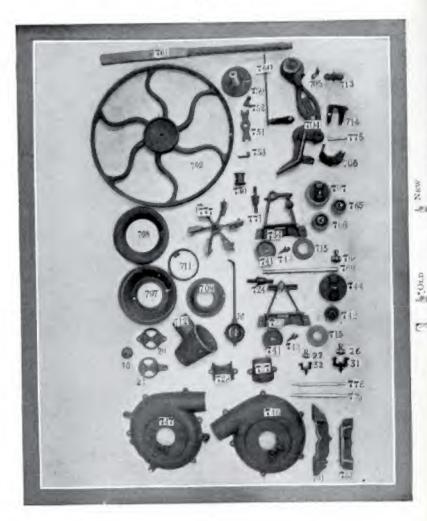
Old Style Cast Gears and New Style Cut Gears are both shown, but are not interchangeable. Order by number to avoid mistakets.

#### Repair List of Western Chief Blower Sizes A, B and C

	when ordering, give traine of thouse and transport of Part Trainten.		
No.	Name of Part.	Pri	CC.
10	Ball	0	10
16	Tuyere Ball		50
20	Ash Door		25
21	Ash Door		25
26	Brass Box (Fly Wheel Shaft, Size B, only)		90
27	Brass Box (Fan Shaft, A, B and C)		SO
31	Large Loop (Fly Wheel Shaft)		50
32	Small Loop (Fan Shaft)		40
701	Frame Foot		50
702	Fly Wheel	2	75
704	Lever Casting	2	75
705	Lever Catch		15
706	Lever Top		25
707	Fire-pot	1	00
708	Fire Ring		80
709	Tuyere Cap		75
711	Tuyere Ring		40
712	Ash Pot	1	25
713	Yoke Top		20
714	Yoke for Lever Casting.		40
715	Crank Ratchet Plate		30
723	Crank Bracket (for old style Cast Gear)		70
724	Crank Gear Stud (old style)		35
725	Nose, Long Side		30
726	Nose, Short Side.		25
730	Fan Pulley		30
733	Box Bracket		50
734	Crank Bracket (for new style Cut Gears)		70
736	Fan Side (Pulley Side)	3	75
737	Fan Side		75
738	Fan Shaft (for Sizes A. B or C)		50
739	Fly Wheel Shaft (for Size B only)		50
741	Ratchet		50
742	Small Gear (old style, cast)		50
743	Ratchet Dog		20
744	Large Gene (ald style cust)	1	00
750	Clutch Hub	1	25
751	Clutch Lever Form		75
752	Clutch Dog Clutch		15
753	Clutch Piece Complete.		10
760	Crank		50
761	Handle		50
765	Small Gear (new style, cut)		75
766	Medium Gear (new style, cut)	1	00
767	Large Gear (new style, cut).		75
768	Large Gear (new style, cut)		90
769	Fly Wheel Shaft (Sizes A and C)		65
771	Crank Gear Stud (new Gears, cut)		35
772	Fan	1	60
776	Lever Casting Shaft.		10

### Western Chief Blowers

Sizes D, E and F



sears are both shown, but are not interchangeable, Old Style Cast Gears and New Style Cut treats are con-matukes. Order by number to avoid matukes.

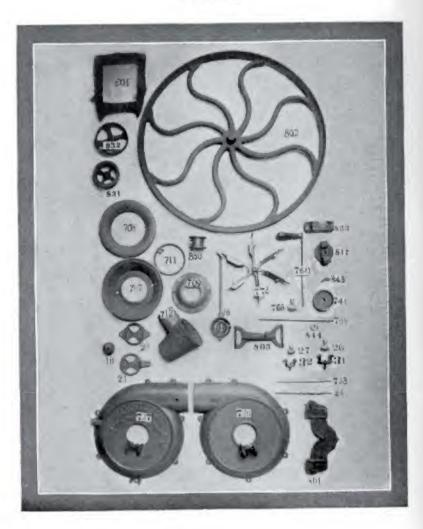
# Repair List of Western Chief Blowers Sizes D, E and F

When ordering, give Name of Blower and Number of Part Wanted.

No.	Name of Part,	Pri	ice.
10	Ball	\$ 0	10
16	Tuyere Ball		50
20	Ash Door		25
21	Ash Door		25
26	Brass Box (Fly Wheel Shaft, Size E only)		90
27	Brass Box (Fan Shaft D, E and F)		80
31	Large Loop (Fly Wheel Shaft)		50
32	Small Loop (Fan Shaft)		40
701	Frame Foot		50
702	Fly Wheel		75
704	Lever Casting		75
705	Lever Catch		1.5
706	Lever Top		25
707	Fire-pot		00
708	Fire Ring		80
709	Tuyere Cap		75
711	Tuyere Ring		40
712	Ash Pot	1	25
713	Yoke Top		20
714	Yoke for Lever Casting.		40
715	Crank Ratchet Plate		30
723	Crank Bracket (for old style Cast Gears).		70
724	Crank Gear Stud (old style)		35
727	Nose, Long Side		30
728	Nose, Short Side		25
730 733	Fan Pulley		30
734	Box Bracket		50
739	Fly Wheel Shaft (for Size E only).		
741	Ratchet		50
742	Small Gear (old style, cast).		50
743	Ratchet Dog		20
744	Large Gear (old style, cast).		00
746	Fan Side (Pulley Side)	2	50
747	Fan Side		50
750	Fan Side	1	25
751	Clutch Hub These Clutch Lever Form		75
752	Clutch Lever Form Clutch Dog Cutch Clutch Piece Complete		15
753	Clutch Dog Clutch Complete.		10
760	Crank		50
761	Handle		50
765	Small Gear (new style, cut)		75
766	Medium Gear (new style, cut)		00
767	Large Gear (new style, cut).	1	75
768	Brass Box (Fly Wheel Shaft D and F).	-	90
769	Fly Wheel Shaft (Sizes D and F)		65
771	Crank Gear Stud (new Gears, cut)		35
776	Lever Casting Shaft		10
777	Fan	1	50
778	Fan Shaft (Sizes D, E or F)		50

#### Western Chief Blower

Size G



#### Repair List of Western Chief Blower Size G

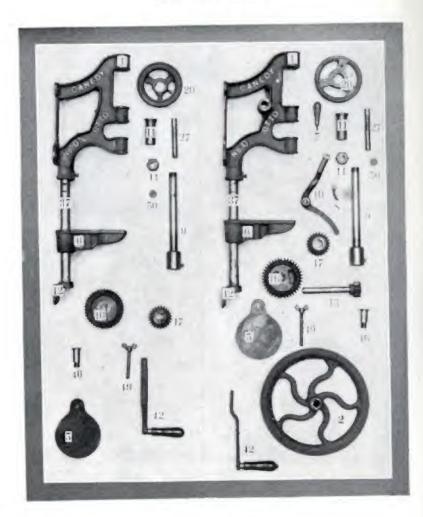
When ordering, give Name of Blower and Number of Part Wanted.

No.	Name of Part.		ice.
10	Ball - Ba	0	10
16	Tuyere Ball		50
20	Ash Door		25
21	Ash Door		25
24	Countershaft		50
26	Brass Box for Countershaft		90
27	Brass Box for Fan Shaft		80
31	Loop for Fly Wheel and Countershaft		50
32	Loop for Fan Shaft		40
707	Fire-pot	1	0.0
708	Fire Ring		80
709	Tuyere Cap		75
711	Toyere Ring		40
712	Ash Pot	1	25
736	Fan Side (Pulley Side)	22	75
737	Fan Side	2	
738	Fan Shaft		50
741	Ratchet		50
760	Crank		50
768	Brass Box for Fly Wheel Shaft		90
769	Fly Wheel Shaft.		65
772	Fan	1	60
801	Frame Foot		50
802	Fly Wheel	3	00
803	Frame Bracket		50
804	Countershaft Bracket	1	00
817	Crank Hub		40
830	Fan Pulley		30
831	Flange Pulley		75
832	Large Pulley		80
833	Square Box		40
843	Ratchet Dog		20
844	Steel Collar		10

Long Belts, \$1.50. Short Belts, 60 cents.

#### Western Chief Drills

Nos. 01/2 and 0

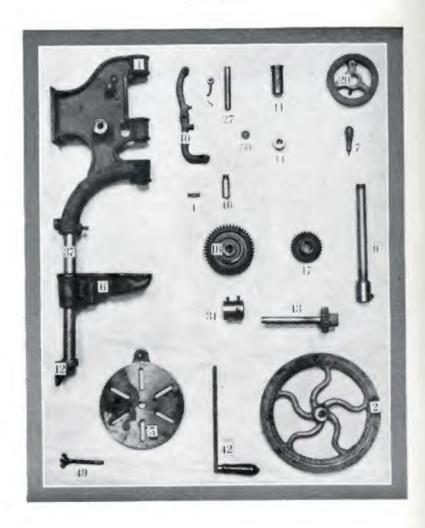


#### Repair List of Drill No. 01/2

No.	Name of Part.	Pri	C
1	Frame	2	5
5	Table		5
6	Table Rest		7
9	Mandrel	1	8
1	Feed Nut		6
2	Foot		3
4	Hexagon Nut		3
6	Large Crank Gear.	1	0
7	Small Bevel Gear		5
0	Feed Wheel		T
7	Feed Screw		5
7	Table Rest Shaft		93
2	Crank		5
6	Stud for No. 16 Gear		4
9	Screw and Nut for Table		1
0	Fiber Washer		0
Va	Repair List of Drill No. 0	De	1011
	Name of Part.	Pr	-
1	Name of Part.	9	5
1 2	Name of Part. Frame	9	5
1 2 5	Name of Part. Frame	9	5 5 5
1 2 5 6	Name of Part. Frame	9	5557
1 2 5 6 7	Name of Part.  Frame  Fly Wheel  Table Rest  Feed Wheel Handle	9	5 5 7 1
1 2 5 6 7 8	Name of Part.  Frame Fly Wheel Table Feed Wheel Handle Feed Arm Dog	3 9	5 5 5 7 1
1 2 5 6 7 8 9	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog. Mandrel	3 9	5 5 7 1 1 8
1 2 5 6 7 8 9	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm	3 9	5 5 7 1 1 8 7
1 2 5 6 7 8 9 0	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not	3 9	5 5 7 1 1 8 3 6
1 2 5 6 7 8 9 0 1 2	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not Foot	3 9	5 5 7 1 1 8 3 6 3
1 2 5 6 7 8 9 0 1 2 3	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle. Feed Arm Dog. Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft	3 9	55 55 7 1 1 8 7 6 3 8
1 2 5 6 6 7 8 9 0 1 2 3 4	Name of Part.  Frame  Fly Wheel  Table Rest  Feed Wheel Handle  Feed Arm Dog  Mandrel  Feed Arm  Feed Not  Foot  Small Gear and Fly Wheel Shaft  Hexagon Nut	1	5 5 5 7 1 1 8 3 6 3 8 5
1 2 5 6 7 8 9 0 1 2 3 4 6	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear.	1	55 55 77 11 18 77 0 38 8 3 8 3 8
1 2 5 6 7 8 9 0 1 2 3 4 6 7	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Bevel Gear	1	55 55 55 55 55 55 55 55 55 55 55 55 55
1 2 5 6 7 8 9 0 1 2 3 4 6 7	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle. Feed Arm Dog. Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Bevel Gear Feed Wheel	1	55 55 77 11 18 87 6 28 8 6 6 28 8 7
1 2 5 6 7 8 9 0 1 2 3 4 6 7	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Arm Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Beel Gear Feed Wheel Feed Screw	1	55 57 11 88 77 60 33 85 50 25 55
1 2 5 6 7 8 9 0 1 2 3 4 6 7 7	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Bevel Gear Feed Wheel Feed Screw Table Rest Shaft Crank	1	5
1 2 5 6 7 8 9 0 1 2 3 4 6 7 17 17 12	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog Mandrel Feed Arm Feed Not Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Bevel Gear Feed Wheel Feed Screw Table Rest Shaft Crank	1	55 55 57 11 18 77 60 28 55 55 55 55 55
1 2 5 6 7 8 9 0 1 1 2 3 1 4 6 1 7 0 2 7 3 7 1 2 1 6 1 9	Name of Part.  Frame Fly Wheel Table Table Rest Feed Wheel Handle Feed Arm Dog. Mandrel Feed Arm Feed Arm Foot Small Gear and Fly Wheel Shaft Hexagon Nut Large Crank Gear Small Bevel Gear Feed Wheel Feed Screw Table Rest Shaft	1	55 57 11 18 77 66 38 50 22 55 55 55

#### Western Chief Drill

No. 00

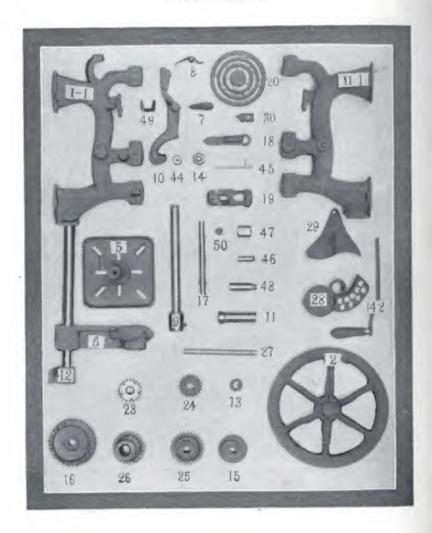


#### Repair List of Drill No. 00

No	Name of Part.	Pri	ice.
1	Frame	\$ 3	00
2	Fly Wheel	. 1	50
4	Feed Arm Spring		10
5	Table		00
6	Table Rest		00
7	Feed Wheel Handle		10
8	Feed Arm Dog.		10
9	Mandrel (state if 1/4 or 41-64 inch)		80
10	Feed Arm		75
11	Feed Nut		60
12	Foot		30
13	Small Gear and Fly Wheel Shaft		80
14	Hexagon Nut		30
16	Large Bevel Gear		50
17	Small Bevel Gear		75
20	Feed Wheel		50
27	Feed Screw		80
31	Crank Hub		50
42	Crank		40
46	Stud for No. 16 Gear		10
49	Screw and Nut for Table		05
50	Fiber Washer		4363

#### Western Chief Drills

Nos. 1 and 2



#### Repair List of Western Chief Drills Nos. 1 and 2

When ordering, give Name of Dritt and Number of Part Wanted.

No.	Name of Part	Pr	ce.
1 - 1	Frame (No. 1 Drill)	\$ 6	00
-1	Frame (No. 2 Drill),		
2	Fly Wheel	2	00
5	Table	13	50
6	Table Rest	E	25
-	Table Rest Shaft (not numbered)	1	50
Sand I	Feed Wheel Handle		200
8	Feed Rod Dog		10
9	Mandrel (bored 5) or 41-64 inch 1	1	80
10	Feed Arm		75
11	Feed Nut		50
12	Foot		40
13	Small Feed Gear		30
14	Brass Nut		50
15	Large Feed Gear		80
16	Large Bevel Gear	1	75
17	Fly Wheel Shaft		50
18	Arm Stop		30
19	Return Yoke		75
20	Feed Wheel	1	00
23	Top Gear (Bevel).		50
24	Bottom Gear (Bevel)		50
25	Double Gear		00
26	Crank Gear	1	115
27	Feed Screw		50
28	Drill Holder (No. 2 Drill)		50
29	Shield (No. 2 Drill)		30
30	Feed Screw Stop (No. 2 Drill)		10
42	Crank		50
44	Feed Arm Roller.		20
45	Return Trip		20
46	Stud for No. 15 Feed Gear.		30
47	Sleeve for No. 26 Crank Gear		60
48	Stud for Sleeve No. 47		40
49	Loop for Feed Arm		.30
50	Fiber Washer		0.5

#### Western Chief Drill

No. 3



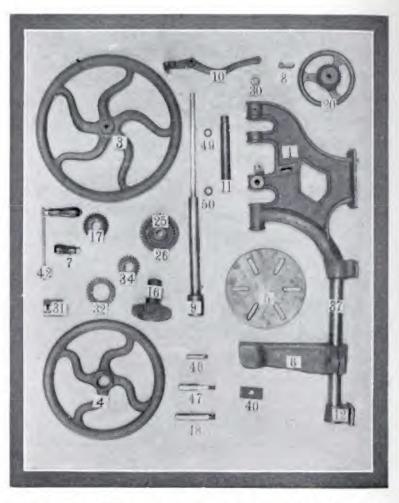
#### Repair List of Western Chief Drill No. 3

When ordering, give Name of Drill and Number of Part Wanted.

No.	Name of Part.	$\mathbb{P}^{r}$	ice.
1	Frame	* 3	00
2	Fly Wheel	1	50
5	Table	1	60
6	Table Rest	- 1	00
7	Feed Wheel Handle		20
8	Feed Arm Dog		10
9	Mandrel (bored 1/2 or 41-64 inch)	1	80
10	Feed Arm		80
11	Feed Nut		60
12	Foot Ispanio and the second sec		30
13	Small Gear		50
14	Brass Nut		50
16	Large Bevel Gear	1	50
17	Small Bevel Gear,		50
20	Feed Wheel		75
27	Feed Screw		50
37	Table Rest Shaft.	1	25
42	Crank		50
46	Stud for No. 16 Bevel Gear		40
47	Fly Wheel Shaft		30
49	Screw and Nut for Table		10
50	Fiber Washer		0.5

### Western Chief Drills

Nos. 4 and 15



A large portion of above are interchangeable in our Nos. 4 and 15 Drills. See opposite page.

#### Repair List of Western Chief Drills

#### Nos. 4 and 15

No. 4 DRILL

When ordering, give Name of Brill and Number of Part Wanted.

No.	Name of Part.	Pri	cc.
1	Frame	5 6	50
3	Fly Wheel (Top)	2	25
4	Fly Wheel (Side)		00
5	Table	13	50
6	Table Rest		40
8	Feed Arm Dog		10
9	Mandrel (bored 1/2 or 41-64 inch)	2	10
10	Feed Arm		75
11	Feed Nut	1	25
12	Foot		40
16	Large Bevel Gear		75
17	Small Bevel Gear		50
20	Feed Wheel		25
25	F 11 C 25 15 1.		
26	Large Gear Double Gear.	200	25
30	Iron Washer		05
31	Crank Hub		60
32	Flat Gear		75
34	Eccentric Bevel Gear		SO
37	Table Rest Shaft		80
40	Table Clamp		10
42	Crank		50
46	Stud for No. 20 Feed Wheel		30
47	Stud for Double Gears Nos. 25 and 26		50
48	Stud for No. 16 Large Bevel Gear.		60
49	Fiber Washer, top of Feed Nut.		05
50	Fiber Washer, bottom of Feed Nut.		05
00	A INC. PERSON, CONTOUR OF A CONTACT AND A CO		45.45

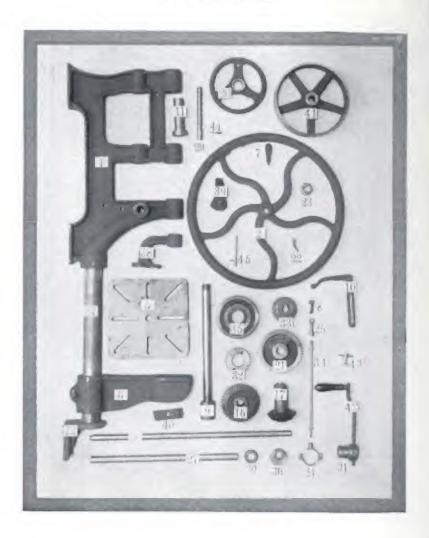
#### No. 15 DRILL

Many of the No. 4 Drill Repairs will fit No. 15 Drill. Those listed below are exclusively for No. 15 Drill, and therefore care should be observed in ordering to be sure to state whether wanted for old No. 4 Drill or the new improved No. 15 Drill. Parts not mentioned below are same as for No. 4, and will be found under No. 4 list above.

No.	Name of Part.	Pri	ce.
1	Frame	\$ 6	50
3	Fly Wheel (Side)	9	25
9	Mandrel (bored 1/2 or 41-64 inch)		10
10	Feed Arm		75
11	Feed Nut	- 1	25
16	Large Bevel Gear (cut)	19	50
20	Feed Wheel	1	25
25 26	Small Gear (cut). { To Make Large Gear (cut). { Double Gear. }	3	00
31	Crank Hub		60 25
	Shaft for Double Gear and Fly Wheel.	-1	00

## Western Chief Drills

Nos. 7 and 12



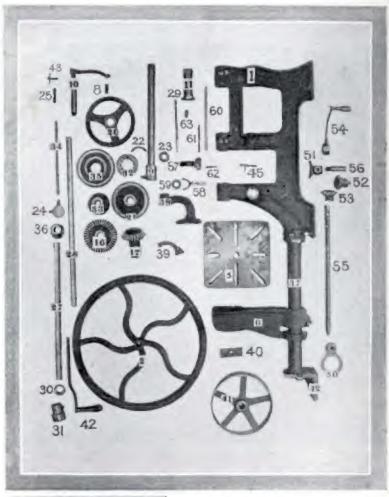
#### Repair List of Western Chief Drills Nos. 7 and 12

When ordering, give Name of Part Wanted, and State PARTICULARLY Whether for No. 7 or No. 12 Drill.

No.	Name of Part	Pr	ice.
1	Frame	8	00
2	Fly Wheel	13	25
5	Table	2	00
6	Table Rest	13	00
7	Feed Wheel Handle		1.5
B	Feed Arm Dog.		1.0
9	Mandrel (bored b) or 41-64 (sech)	10	50
10	Feed Arm		60
11	Feed Nut		5941
12	Foot promise and the second se		50
16	Large Revel Gear.	19	50
17	Small Revel Gear	1)	0.0
20	Feed Wheel		60
21	Large Gear with Hub.	19	25
22	Latch, to change Gear		50
23	Brass Nut		50.
24	Brass Eccentric Strap		65
25	Brass Pitman Elead,		511
27	Pulley and Crank Shaft Fly Wheel and Gear Shaft		90
28	Fly Wheel and Gear Shaft	1	0.0
29	Feed Screw	1	0.0
30	Washer, cast for Pulley Shaft.		20
31	Crank Hub	1	50
32	Small Flat Gear (always furnished with No. 25 Gear)	1	411
33	Small Hub Gear	1	561
34	Pitman Rod		20
35	Large Straight Gear (always furnished with No 32 Gear)		00
36	Ercentric Table Day Cl. (		611
37	Table Rest Shaft	5	25
38	Large Bracket		60
39	Small Bracket		50
40	Table Clamp	-	20
42	Pulley for Power	2	00
43	Crank		50
44	Eccentric Bolt		30
7.7	ACTEM, THE PECH ACTEM		111

### Western Chief Drill

No. 14



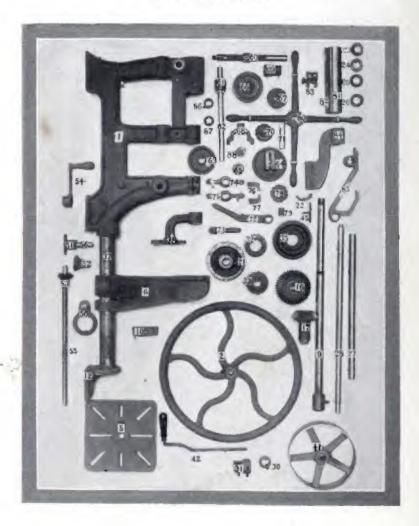


New Style.

No.	Repair List of Western Chief Drill No. 14		
1	Frame \$	8	50
2	Fly Wheel	40	25
5	Table	*5	00
6	Table Rest	2	00
8	Feed Arm Dog. Mandrel (bored ½ or 41-64 inch),		10
9	Mandrel (bored ½ or 41-64 meh)	2	50
10	Feed Arm		60
11	Feed Nut		90
12	Foot		50
16	Large Bevel Gear	9	50
17	Small Bevel Gear	17	00
20	Feed Wheel		60
21	Large Gear with Hub	2	25
22	Latch to Change Gear		50
23	Brass Nut		50
24	Brass Eccentric Strap		65
25	Brass Pitman Head.,		50
27	Pulley and Crank Shaft.		90
28	Pulley and Crank Shaft.  Fly Wheel and Gear Shaft.	1	0.0
29	Frod Screw	I	00
30	Washer, Cast for Pulley Shaft		20
31	Crank Hub	1	50
32	Small Flat Gear (Always Furnished with No. 35 Gear)	t	40
33	Small Hub Gear	1	50
34	Pitman Rod		20
35	Pitman Rod	12	00
36	Eccentric		60
37	Table Rest Shaft.	13	25
38	Large Bracket		60
39	Small Bracket		50
40	Table Clamp		20
41	Pulley for Power.	2	00
42	Crank		50
43	Eccentric Bolt		30
45	Trip for Gear Latch		20
50	Table Rest Screw Nut.		70
51	Screw Bearing		-40
52	Raise and Lower Crank Pinion		50
53	Raise and Lower Ton Pinion		50
54	Raise and Lower Crank		60
55	Raise and Lower Screw	- 1	00
56	Stud		25
57	Feed Yoke	1	-00
58	Return Lever		90
59	Return Lever Collar		80
60	Stop Shaft		20
61	Feed Yoke Plunger		40
62	Catch with Spring to No. 61 Plunger		20
63	Upper and Lower Stops		30
70	Large Feed Gear (New Style)		60
71	Small Feed Gear (New Style)		30
72	Ratchet Fred Gear (New Style)		70
73	Long Feed Arm (New Style)		60
74	Cross Feed Arm (New Style)		40
75	Feed Dog (New Style)		10
76	Bushing for No. 73 Feed Arm (New Style)		30
77	Lock-nut for No. 73 Feed Arm (New Style)		10

### Western Chief Drills

Nos. 16 and 17



00008

### Repair List of Drills Nos. 16 and 17.

Fly Wheel. 5 Table Reas 9 Mandrel (Bored 5 or 14 inch) 10 Table Clamp. 12 Foot 14 Large Beyel Gear 17 Small Bevel Gear 18 Small Bevel Gear 21 Large Gear with Hub 22 Latch to Change Gear 23 Upper Lock-mit for Mandrel 24 Upper Adjusting Not for Mandrel 25 Upper Fiber Washer for Mandrel 26 Upper Fiber Washer for Mandrel 27 Palley and Crank Shaft. 28 Fly Wheel and Cear Shaft 30 Collar for Pulley Shaft 31 Crank Hub. 32 Small Flat Gear (Furnished with No. 35 Gear) 33 Small Hub Gear (Furnished with No. 32 Gear) 35 Small Flat Gear (Furnished with No. 32 Gear) 36 Large Straight Gear (Furnished with No. 32 Gear) 37 Table Reat Shaft 38 Large Racket. 41 Palley for Power. 42 Crank 45 Trip for Gear Latch 50 Table Reat Screw Not. 51 Screw Bearing (51, 52 and 56 always assembled) 52 Raise and Lower Top Finion 54 Raise and Lower Top Finion 55 Raise and Lower Top Finion 56 Raise and Lower Screw 56 Stud 60 Lever and Feed Gear Shaft 61 Worm Feed Gear 62 Worm Feed Gear 63 Ratchet Feed Gear 64 Large Feed Gear 65 Smail Feed Gear 66 Large Feed Gear 67 Cintch Hub for Spiral Feed Gear 68 Clatch Bracket. 68 Shaft 69 Clutch Hand Wheel 70 Lower Feed Arm 71 Large Feed Gear 72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Lower Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Bushing for Long Feed Arm 70 Upper Feed Dog 71 Lower Feed Dog 72 Hand Wheel, Lock-nut for Feed Arm 73 Short Feed Long Feed Arm 74 Upper Cross Feed Arm 75 Lower Feed Dog 76 Hand, Feed Long Feed Arm 77 Lower Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Bushing for Long Feed Arm 79 Bushing for Long Feed Arm 71 Feed Sleeve Rack 72 Feed Sleeve Rack 73 Brass Clamp for Feel Sleeve Rack	yel Gear	No.	Name of Part.	Price.
Table Table Rest  Mandrel (Bored 5 or 11 inch)  Table Clamp  Foot  Large Bevel Gear  Small Bevel Gear  Large Gear with Hub  Latch to Change Gear  Upper Lock-nut for Mandrel  Upper Adjusting Not for Mandrel  Upper Fiber Washer for Mandrel  Upper Jone Fiber Washer for Mandrel  Upper Fiber Washer for Mandrel  Upper Jone Fiber Jone		1	Frame	\$10.00
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		Fly Wheel	0.50
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		Table	51 1300
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		Figure	3 00
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		1850C Kest	2 50
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		Mandrel (Boted % of & Inch)	4 00
Large Bevel Gear  17 Small Bevel Gear  1. Large Gear with Hubb  22 Latch to Change Gear  23 Upper Lock-nut for Mandrel  24 Upper Adjusting Not for Mandrel  25 Upper Fiber Washer for Mandrel  26 Lower Bearing Not for Mandrel  27 Pulley and Crank Shaft.  28 Fill Wheel and Gear Shaft  30 Collar for Pulley Shaft  31 Crank Hub  32 Small Flat Gear (Furnished with No. 35 Gear)  33 Small Hub Gear  34 Large Straight Gear (Furnished with No. 32 Gear)  35 Table Rest Shaft  36 Large Straight Gear (Furnished with No. 32 Gear)  37 Table Rest Shaft  38 Large Rracket.  40 Pulley for Power  41 Crank  42 Crank  43 Trip for Gear Latch  44 Table Rest Screw Not.  45 Serew Bearing (51, 52 and 56 always assembled)  46 Raise and Lower Crank Pinion  47 Raise and Lower Crank Pinion  48 Raise and Lower Crank  49 Raise and Lower Screw  40 Lever and Feed Gear Shaft  40 Lever and Feed Gear  41 Worm Feed Gear  42 Large Feed Gear  43 Clatch Bracket.  44 Worm Feed Gear  45 Large Feed Gear  46 Large Feed Gear  47 Clatch Hub for Spiral Feed Gear  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft  70 Clutch Hand Wheel  71 Large Feed Gear Shaft  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Hand Wheel, Lock-nut for Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Dog  79 Lower Feed Dog  70 Lower Feed Dog  71 Lower Feed Dog  72 Lower Feed Dog  73 Lower Feed Dog  74 Lower Feed Dog  75 Lower Feed Dog  76 Lower Feed Dog  77 Lower Feed Dog  78 Lower Feed Sleeve  88 Brass Clamp for Feed Sleeve Rack  88 Brass Clamp for Feed Sleeve Rack	yel Gear		Table Clamp	20
17 Small Bevel Gear 1 Latch to Change Gear 2 Upper Lock-mut for Mandrel 2 Upper Adjusting Nut for Mandrel 2 Upper Adjusting Nut for Mandrel 2 Upper Fiber Washer for Mandrel 2 Lower Bearing Nut for Mandrel 3 Lorder Bear Shaft 3 Collar for Pulley Shaft 3 Crank Hub 3 Small Flat Gear (Furnished with No. 35 Gear) 3 Small Hub Gear 3 Large Straight Gear (Furnished with No. 32 Gear) 3 Large Straight Gear (Furnished with No. 32 Gear) 4 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Reacket. 5 Trip for Gear Latch 5 Trip for Gear Latch 5 Trip for Gear Latch 5 Straight Gear (Furnished with No. 32 Gear) 5 Raise and Lower Crank Pinion 5 Raise and Lower Crank 5 Raise and Lower Crank 6 Raise and Lower Crank 7 Clutch Feed Gear 7 Clutch Hub for Spiral Feed Gear 8 Clutch Bracket. 8 Sleve for No. 60 Shaft 7 Clutch Hand Wheel 7 Large Feed Gear Shaft 8 Long Freed Arm 9 Short Feed Arm 9 Upper Cross Feed Arm 1 Upper Cross Feed Arm 1 Upper Geor Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Hand Wheel, Lock-mut for Feed Arm 1 Upper Gear Shaft 1 Feed Sleeve 1 Feed Sleeve Rack 2 Feed Sleeve Rack 3 Freed Sleeve Rack 3 Freed Sleeve Rack 4 Brass Clamp for Feed Sleeve Rack	vel Gear         2 00           ar with Hub         2 25           Change Gear         50           sek-mut for Mandrel         40           ber Washer for Mandrel         40           ber Washer for Mandrel         40           de Zraok Shaft         90           de Paule Shaft         90           r Putley Shaft         20           ub         150           r Gear (Furnished with No. 35 Gear)         140           ub Gear         150           raight Gear (Furnished with No. 32 Gear)         20           st Shaft         22           acket         40           r Power         20           gear Latch         20           st Screw Not         20           set Screw Not         20           set Screw Not         20           set Screw Not         20           set Screw Not         20           d Lower Crank Pinion         50           d Lower Crank Pinion         50           d Lower Crank Pinion         50           d Lower Screw         10           act Gear Shaft         60           feed Gear         90           ced Gear Sh	12	Foot	50
17 Small Bevel Gear 1 Latch to Change Gear 2 Upper Lock-mut for Mandrel 2 Upper Adjusting Nut for Mandrel 2 Upper Adjusting Nut for Mandrel 2 Upper Fiber Washer for Mandrel 2 Lower Bearing Nut for Mandrel 3 Lorder Bear Shaft 3 Collar for Pulley Shaft 3 Crank Hub 3 Small Flat Gear (Furnished with No. 35 Gear) 3 Small Hub Gear 3 Large Straight Gear (Furnished with No. 32 Gear) 3 Large Straight Gear (Furnished with No. 32 Gear) 4 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Straight Gear (Furnished with No. 32 Gear) 5 Large Reacket. 5 Trip for Gear Latch 5 Trip for Gear Latch 5 Trip for Gear Latch 5 Straight Gear (Furnished with No. 32 Gear) 5 Raise and Lower Crank Pinion 5 Raise and Lower Crank 5 Raise and Lower Crank 6 Raise and Lower Crank 7 Clutch Feed Gear 7 Clutch Hub for Spiral Feed Gear 8 Clutch Bracket. 8 Sleve for No. 60 Shaft 7 Clutch Hand Wheel 7 Large Feed Gear Shaft 8 Long Freed Arm 9 Short Feed Arm 9 Upper Cross Feed Arm 1 Upper Cross Feed Arm 1 Upper Geor Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Lower Feed Dog 1 Hand Wheel, Lock-mut for Feed Arm 1 Upper Gear Shaft 1 Feed Sleeve 1 Feed Sleeve Rack 2 Feed Sleeve Rack 3 Freed Sleeve Rack 3 Freed Sleeve Rack 4 Brass Clamp for Feed Sleeve Rack	vel Gear         2 00           ar with Hub         2 25           Change Gear         50           sek-mut for Mandrel         40           ber Washer for Mandrel         40           ber Washer for Mandrel         40           de Zraok Shaft         90           de Paule Shaft         90           r Putley Shaft         20           ub         150           r Gear (Furnished with No. 35 Gear)         140           ub Gear         150           raight Gear (Furnished with No. 32 Gear)         20           st Shaft         22           acket         40           r Power         20           gear Latch         20           st Screw Not         20           set Screw Not         20           set Screw Not         20           set Screw Not         20           set Screw Not         20           d Lower Crank Pinion         50           d Lower Crank Pinion         50           d Lower Crank Pinion         50           d Lower Screw         10           act Gear Shaft         60           feed Gear         90           ced Gear Sh	16	Large Bevel Gear	2 50
21 Large Gear with Hub 22 Latch to Change Gear 23 Upper Lock-nut for Mandrel 24 Upper Adjusting Nut for Mandrel 25 Upper Fiber Washer for Mandrel 26 Lower Bearing Nut for Mandrel 27 Pulley and Crank Shaft. 28 Fly Wheel and Gear Shaft 30 Collar for Pulley Shaft 31 Crank Hub 32 Small Flat Gear (Furnished with No. 35 Gear) 33 Small Hub Gear 34 Large Straight Geas (Furnished with No. 32 Gear) 35 Large Straight Geas (Furnished with No. 32 Gear) 36 Large Reaket. 41 Pulley for Power 41 Pulley for Power 42 Crank 45 Trip for Gear Latch 45 Trip for Gear Latch 46 Table Rest Screw Not. 47 Serew Bearing (51, 52 and 56 always assembled). 48 Raise and Lower Crank Pinton 48 Raise and Lower Top Pinton 48 Raise and Lower Screw 49 Stod 40 Lever and Feed Gear Shaft, with Gear 40 Worm Feed Gear 41 Carge Feed Gear 42 Crank 43 Raise Heed Gear 44 Large Feed Gear 45 Carche Hub for Spiral Feed Gear 46 Large Spiral Feed Gear 47 Clutch Hub for Spiral Feed Gear 48 Clutch Hand Wheel 49 Large Feed Arm 40 Upper Cross Feed Arm 40 Upper Cross Feed Arm 41 Upper Cross Feed Arm 42 Lower Feed Dog 44 Lower Feed Dog 45 Hand Wheel Lock-nut for Feed Arm 46 Rushing for Long Feed Arm 47 Upper Feed Dog 48 Hand, Feed Lever 48 Brass Clamp for Feed Seeve Rack 48 Brass Clamp for Feed Seleve Rack 48 Brass Clamp for Feed Seleve Rack 48 Brass Clamp for Feed Seleve Rack	ar with Hub Change Gear bek-nut for Mandrel ber Washer for Mandrel dijusting Nut for Mandrel ber Washer for Mandrel der Arabher for Mandrel der Gear der		Small Bevel Gear	9 00
22 Latch to Change Gear 24 Upper Lock-mut for Mandrel 25 Upper Fiber Washer for Mandrel 26 Lower Bearing Nut for Mandrel 27 Pulley and Crank Shaft 28 Fly Wheel and Gear Shaft 30 Collar for Pulley Shaft 31 Crank Hub 32 Small Flat Gear (Furnished with No. 35 Gear) 33 Small Hub Gear 41 Pulley for Power 42 Crank 43 Large Straight Gear (Furnished with No. 32 Gear) 45 Trip for Gear Latch 46 Table Rest Screw Not 47 Table Rest Screw Not 48 Straight Lower Crank Pinion 48 Raise and Lower Crank Pinion 48 Raise and Lower Top Pinion 48 Raise and Lower Screw 49 Stud 40 Lever and Feed Gear 40 Worm Feed Gear 41 Large Freed Gear 42 Worm Feed Gear 43 Large Freed Gear 44 Large Freed Gear 45 Large Freed Gear 46 Large Spiral Freed Gear 47 Clatch Hub for Spiral Feed Gear 48 Clatch Bracket 49 Sleeve for No. 66 Shaft 40 Upper Cross Feed Arm 40 Upper Cross Feed Arm 41 Lower Feed Gear 42 Long Freed Arm 43 Short Feed Arm 44 Upper Cross Feed Arm 45 Lower Feed Dog 47 Lower Feed Dog 48 Ushing for Long Feed Arm 49 Rushing for Long Feed Arm 40 Upper Cross Feed Arm 40 Lower Feed Dog 41 Large Feed Gear 42 Long Feed Arm 43 Lower Feed Dog 44 Hand Wheel 45 Lower Feed Dog 46 Hand Feed Lever 47 Feed Sleeve Rack 48 Brass Clamp for Feed Sleeve Rack	Change Gear 50ck-nut for Mandrel 40		Large Gear with Hub	9 95
Lower Bearing Nut for Mandrel. Pulley and Crank Shaft. Fly Wheel and Gear Shaft. Crank Hub. Crank Hub. Small Flat Gear (Furnished with No. 35 Gear) Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Large Straight Gear (Furnished with No. 32 Gear) Table Rest Shaft. Large Bracket. Pulley for Power. Crank Trip for Gear Latch Table Rest Screw Nul. Strip for Gear Latch Table Rest Screw Nul. Sales and Lower Crank Finion. Raise and Lower Crank Raise	Der Washer for Mandrel   10   20   20   20   20   20   20   20		Lately to Change Gent	561
Lower Bearing Nut for Mandrel. Pulley and Crank Shaft. Fly Wheel and Gear Shaft. Crank Hub. Crank Hub. Small Flat Gear (Furnished with No. 35 Gear) Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Large Straight Gear (Furnished with No. 32 Gear) Table Rest Shaft. Large Bracket. Pulley for Power. Crank Trip for Gear Latch Table Rest Screw Nul. Strip for Gear Latch Table Rest Screw Nul. Sales and Lower Crank Finion. Raise and Lower Crank Raise	Der Washer for Mandrel   10   20   20   20   20   20   20   20		Liver I and for Manager	267
Lower Bearing Nut for Mandrel. Pulley and Crank Shaft. Fly Wheel and Gear Shaft. Crank Hub. Crank Hub. Small Flat Gear (Furnished with No. 35 Gear) Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Large Straight Gear (Furnished with No. 32 Gear) Table Rest Shaft. Large Bracket. Pulley for Power. Crank Trip for Gear Latch Table Rest Screw Nul. Strip for Gear Latch Table Rest Screw Nul. Sales and Lower Crank Finion. Raise and Lower Crank Raise	Der Washer for Mandrel   10   20   20   20   20   20   20   20		Opper Lack-net for Manufel	40
26 Lówer Bearing Nut for Mandrel.  27 Pulley and Crank Shaft.  28 Fly Wheel and Gear Shaft.  30 Collar for Pulley Shaft.  31 Crank Hub.  32 Small Flat Gear (Furnished with No. 35 Gear).  33 Small Hub Gear.  34 Large Straight Gear (Furnished with No. 32 Gear).  35 Table Rest Shaft.  36 Large Bracket.  41 Pulley for Power.  42 Crank.  45 Trip for Gear Latch.  45 Trip for Gear Latch.  45 Trip for Gear Latch.  46 Table Rest Screw Nul.  45 Serew Bearing (51, 52 and 56 always assembled).  46 Raise and Lower Crank Pinton.  47 Raise and Lower Top Pinton.  48 Raise and Lower Top Pinton.  49 Raise and Lower Screw.  40 Lever and Feed Gear Shaft, with Gear.  40 Worm Feed Gear.  41 Worm Feed Gear.  42 Worm Feed Gear.  43 Ratchet Feed Gear.  44 Large Feed Gear.  45 Clatch Hub for Spiral Feed Gear.  46 Clatch Bracket.  47 Clatch Hub for Spiral Feed Gear.  48 Clatch Bracket.  49 Sleeve for No. 60 Shaft.  40 Upper Cross Feed Arm.  40 Upper Cross Feed Arm.  41 Upper Cross Feed Arm.  42 Upper Feed Dog.  43 Hand, Feed Lever.  44 Hand, Feed Lever.  45 Feed Sleeve.  46 Feed Sleeve.  47 Feed Sleeve Rack.  48 Brass Clamp for Feed Sleeve Rack.  48 Brass Clamp for Feed Sleeve Rack.  49 Brass Clamp for Feed Sleeve Rack.	Carank Shaft		Upper Adjusting Nut for Manurel	-141
Fly Wheel and Gear Shaft Collar for Pulley Shaft Crank Hub Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Large Straight Gear (Furnished with No. 32 Gear) Table Rest Shaft Large Rracket. Pulley for Power Crank Trip for Gear Latch Trip for Gear Latch Trip for Gear Latch Trip for Gear Latch Serew Bearing (51, 52 and 56 always assembled). Raise and Lower Crank Philon Raise and Lower Top Philon Raise and Lower Top Philon Raise and Lower Serew Stad Lever and Feed Gear Shaft, with Gear Worm Feed Gear Worm Feed Gear Small Feed Gear Small Feed Gear Clatch Hub for Spiral Feed Gear Clatch Facket. Sleeve for No. 60 Shlatt Clutch Hand Wheel Large Feed Gear Shaft Long Feed Arm Upper Cross Feed Arm Lower Cross Feed Arm Lower Feed Dog Hand Wheel Lock-nut for Feed Arm Rushing for Long Feed Arm Hund, Feed Lever Feed Sleeve Rack Feed Sleeve Rack Feed Sleeve Rack Feed Sleeve Rack Brass Clamp for Feed Sleeve Rack Brass Clamp for Feed Sleeve Rack	el and Gear Shaft		Upper Fiber Washer for Mandrel	10
Fly Wheel and Gear Shaft Collar for Pulley Shaft Crank Hub Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Large Straight Gear (Furnished with No. 32 Gear) Table Rest Shaft Large Rracket. Pulley for Power Crank Trip for Gear Latch Trip for Gear Latch Trip for Gear Latch Trip for Gear Latch Serew Bearing (51, 52 and 56 always assembled). Raise and Lower Crank Philon Raise and Lower Top Philon Raise and Lower Top Philon Raise and Lower Serew Stad Lever and Feed Gear Shaft, with Gear Worm Feed Gear Worm Feed Gear Small Feed Gear Small Feed Gear Clatch Hub for Spiral Feed Gear Clatch Facket. Sleeve for No. 60 Shlatt Clutch Hand Wheel Large Feed Gear Shaft Long Feed Arm Upper Cross Feed Arm Lower Cross Feed Arm Lower Feed Dog Hand Wheel Lock-nut for Feed Arm Rushing for Long Feed Arm Hund, Feed Lever Feed Sleeve Rack Feed Sleeve Rack Feed Sleeve Rack Feed Sleeve Rack Brass Clamp for Feed Sleeve Rack Brass Clamp for Feed Sleeve Rack	el and Gear Shaft		Lower Bearing Nut for Mandrel.	40
Collar for Pulley Shall Crank Hub. Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Table Reat Shalt Starge Straight Gear (Furnished with No. 32 Gear) Table Reat Shalt Large Bracket. Pulley for Power Crank Trip for Gear Latch Trip for Gear Latch Table Rest Screw Not. Strew Bearing (51, 52 and 56 always assembled). Raise and Lower Crank Pinion. Raise and Lower Top Pinion Raise and Lower Top Pinion Raise and Lower Screw Stad College and Lower Screw Stad College And College Feed Dog College And College Feed And College Feed And College Feed Seeve Rack Feed Sleeve Rack	r Pattery Shaft  ab Cear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Shaft  acket.  7 Power  2 00  Sa Shaft  2 25  acket.  7 Power  2 200  Sear Latch  2 25  Sear Latch  2 25  Sear Sterew Nut.  2 25  2 30  At Lower Crank Pinion  3 4 Lower Crank Pinion  4 Lower Crank Pinion  5 4 Lower Crank Pinion  5 5 4 Lower Crank  6 6 4 Lower Sterew  1 00  4 Lower Sterew  1 00  4 Lower Sterew  1 00  5 6 Feed Gear  2 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		Pulley and Crank Shaft	90
Collar for Pulley Shall Crank Hub. Small Flat Gear (Furnished with No. 35 Gear) Small Hub Gear Table Reat Shalt Starge Straight Gear (Furnished with No. 32 Gear) Table Reat Shalt Large Bracket. Pulley for Power Crank Trip for Gear Latch Trip for Gear Latch Table Rest Screw Not. Strew Bearing (51, 52 and 56 always assembled). Raise and Lower Crank Pinion. Raise and Lower Top Pinion Raise and Lower Top Pinion Raise and Lower Screw Stad College and Lower Screw Stad College And College Feed Dog College And College Feed And College Feed And College Feed Seeve Rack Feed Sleeve Rack	r Pattery Shaft  ab Cear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Gear (Furnished with No. 35 Gear)  at Shaft  acket.  7 Power  2 00  Sa Shaft  2 25  acket.  7 Power  2 200  Sear Latch  2 25  Sear Latch  2 25  Sear Sterew Nut.  2 25  2 30  At Lower Crank Pinion  3 4 Lower Crank Pinion  4 Lower Crank Pinion  5 4 Lower Crank Pinion  5 5 4 Lower Crank  6 6 4 Lower Sterew  1 00  4 Lower Sterew  1 00  4 Lower Sterew  1 00  5 6 Feed Gear  2 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	28	Fly Wheel and Gear Shaft	1 (8)
Small Flat Gear (Furnished with No. 35 Gear)  Small Flat Gear (Furnished with No. 32 Gear)  Table Rest Shalt  Large Bracket.  Pulley for Power.  Crank  Trip for Gear Latch  Trip for Gear Latch  Serew Bearing (51, 52 and 56 always assembled)  Raise and Lower Top Pinion  Raise and Lower Top Pinion  Raise and Lower Serew  Stad  Worm Feed Gear Shalt, with Gear  Worm Feed Gear Shalt  Raise Feed Gear  Large Feed Gear  Large Spiral Feed Gear  Clatch Hub for Spiral Feed Gear  Clatch Hub for Spiral Feed Gear  Clatch Hub for Spiral Feed Gear  Large Feed Gear  Clatch Hub for Spiral Feed Gear  Clatch Hub for Spiral Feed Gear  Large Feed Gear  Large Feed Arm  Upper Cross Feed Arm  Lower Feed Arm  Upper Peed Dog  Hand Wheel Lock-nut for Feed Arm  Peed Sleeve Feed Lower Feed Arm  Lower Feed Dog  Hand Wheel Lock-nut for Feed Arm  Rushing for Long Feed Arm  Peed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Brass Clamp for Feed Sleeve Rack	at Gear (Furnished with No. 35 Gear)  ab Gear (Furnished with No. 35 Gear)  ab Gear  raight Gear (Furnished with No. 32 Gear)  2 00  3 1 50  3 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	30	Collar for Pulley Shaft	20
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42 Crank 43 Trip for Gear Latch 50 Table Rest Screw Not. 51 Serew Bearing (51, 52 and 56 always assembled). 52 Raise and Lower Crank Pinion. 53 Raise and Lower Top Pinion 54 Raise and Lower Erank 55 Raise and Lower Screw 56 Stud 60 Lever and Feed Gear Shait, with Gear 61 Worm Feed Gear 62 Worm Feed Gear 63 Ratchet Feed Gear 64 Large Feed Gear 65 Smail Feed Gear 66 Large Spiral Feed Gear 67 Clutch Hub for Spiral Feed Gear 68 Clutch Hub for Spiral Feed Gear 69 Clutch Hub for Spiral Feed Gear 60 Large Feed Gear 61 Large Feed Gear 62 Clutch Hund Wheel 63 Ratchet Feed Gear 64 Clutch Gracket. 65 Sleeve for No. 60 Shalt 66 Clutch Hund Wheel 67 Clutch Hund Wheel 68 Clutch Gear Shait 69 Short Feed Arm 60 Clutch Gear 61 Long Feed Arm 62 Lower Feed Arm 63 Short Feed Arm 64 Lower Cross Feed Arm 65 Lower Feed Dog 66 Lower Feed Dog 67 Lower Feed Dog 68 Hand Wheel Lock-nut for Feed Arm 68 Rushing for Long Feed Arm 68 Hand, Feed Lever 68 Feed Sleeve Rack 68 Feed Sleeve Rack 68 Brass Clamp for Feed Sleeve Rack	Gear Latch		Large Bracket.	
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Trip for Gear Latch Table Rest Screw Not. Strew Bearing (51, 52 and 56 always assembled). Raise and Lower Crank Pinion. Raise and Lower Top Pinion. Raise and Lower Screw. Stud. Lever and Feed Gear Shalt, with Gear. Worm Feed Gear Shalt. Worm Feed Gear Shalt. Raise and Lower Screw. Small Feed Gear. Large Feed Gear. Clatch Hub for Spiral Feed Gear. Clatch Bracket. Sleeve for No. 60 Shalt. Clutch Hand Wheel. Large Feed Gear Shalt. Long Feed Arm. Upper Cross Feed Arm. Lower Feed Arm. Lower Feed Dog. Hand Wheel. Lock-nut for Feed Arm. Rushing for Long Feed Arm. Hand, Feed Lever. Feed Sleeve Rack. Feed Sleeve Rack. Feed Sleeve Rack. Brass Clamp for Feed Sleeve Rack.	Gear Latch set Screw Ng1 d Lower Crank Pinion d Lower Crank Pinion d Lower Crank Hinton d Lower Crank d Lower Screw 1 00 d Lower Screw 1 00 eed Gear set Gear Shaft Sced Gear set Gear Shaft	42	Crank	50
Raise and Lower Crank  Raise and Lower Crank  Stad  Raise and Lower Crank  Stad  Cover and Feed Gear Shait, with Gear  Worm Feed Gear  Worm Feed Gear  Worm Feed Gear  Cover and Feed Gear  Ratchet Feed Gear  Large Feed Gear  Charlet Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hand Wheel  Large Feed Gear Shait  Large Feed Gear Shait  Lower Feed Arm  Short Feed Arm  Lower Feed Arm  Lower Cross Feed Arm  Lower Feed Dog  Lower Feed Dog  Hand Wheel Lock-nut for Feed Arm  Bushing for Long Feed Arm  Hand, Feed Lever  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Blass Clamp for Feed Sleeve Rack	d Lower Top Fillor d Lower Screw	45	Trip for Gear Latch	120
Raise and Lower Crank  Raise and Lower Crank  Stad  Raise and Lower Crank  Stad  Cover and Feed Gear Shait, with Gear  Worm Feed Gear  Worm Feed Gear  Worm Feed Gear  Cover and Feed Gear  Ratchet Feed Gear  Large Feed Gear  Charlet Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hub for Spiral Feed Gear  Clutch Hand Wheel  Large Feed Gear Shait  Large Feed Gear Shait  Lower Feed Arm  Short Feed Arm  Lower Feed Arm  Lower Cross Feed Arm  Lower Feed Dog  Lower Feed Dog  Hand Wheel Lock-nut for Feed Arm  Bushing for Long Feed Arm  Hand, Feed Lever  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Feed Sleeve Rack  Blass Clamp for Feed Sleeve Rack	d Lower Top Fillor d Lower Screw	50	Table Rest Screw Nut	781
Raise and Lower Crank  Raise and Lower Crank  Stad  Raise and Lower Crank  Stad  Cover and Feed Gear Shait, with Gear  Worm Feed Gear  Worm Feed Gear  Worm Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover Feed Gear  Cover and Feed Arm  Feed Steeve Rack  Feed Steeve Rack  Feed Steeve Rack  Brass Clamp for Feed Steeve Rack	d Lower Top Fillor d Lower Screw	51	Screw Bearing (51, 52 and 56 always assembled)	30
Raise and Lower Crank  Raise and Lower Crank  Stad  Raise and Lower Crank  Stad  Cover and Feed Gear Shait, with Gear  Worm Feed Gear  Worm Feed Gear  Worm Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover and Feed Gear  Cover Feed Gear  Cover and Feed Arm  Feed Steeve Rack  Feed Steeve Rack  Feed Steeve Rack  Brass Clamp for Feed Steeve Rack	d Lower Top Fillor d Lower Screw		Paiss and Lower Cearle Pinion	561
55 Raise and Lower Screw  6 Stud  60 Lever and Feed Gear Shall, with Gear  61 Worm Feed Gear  62 Worm Feed Gear  63 Ratchet Feed Gear  64 Large Feed Gear  65 Small Feed Gear  66 Clatch Bracket  67 Clatch Hub for Spiral Feed Gear  68 Clatch Bracket  69 Sleeve for No. 60 Shalt  70 Clatch Hand Wheel  71 Large Feed Gear Shalt  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nat for Feed Arm  79 Bushing for Long Feed Arm  79 Rushing for Long Feed Arm  71 Feed Sleeve  71 Feed Sleeve Rack  72 Feed Sleeve Rack  73 Feed Sleeve Rack  74 Feed Sleeve Rack  75 Feed Sleeve Rack  76 Feed Sleeve Rack  77 Feed Sleeve Rack  78 Blass Clamp for Feed Sleeve Rack	1 00   25   25   25   25   26   26   26   26		Pairs and Lores Ton Pinion	541
55 Raise and Lower Screw  6 Stud  60 Lever and Feed Gear Shall, with Gear  61 Worm Feed Gear  62 Worm Feed Gear  63 Ratchet Feed Gear  64 Large Feed Gear  65 Small Feed Gear  66 Clatch Bracket  67 Clatch Hub for Spiral Feed Gear  68 Clatch Bracket  69 Sleeve for No. 60 Shalt  70 Clatch Hand Wheel  71 Large Feed Gear Shalt  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nat for Feed Arm  79 Bushing for Long Feed Arm  79 Rushing for Long Feed Arm  71 Feed Sleeve  71 Feed Sleeve Rack  72 Feed Sleeve Rack  73 Feed Sleeve Rack  74 Feed Sleeve Rack  75 Feed Sleeve Rack  76 Feed Sleeve Rack  77 Feed Sleeve Rack  78 Blass Clamp for Feed Sleeve Rack	1 00   25   25   25   25   26   26   26   26		Pains and Louis Courts	
66 Lever and Feed Gear Shall, with Gear 61 Worm Feed Gear Shall, with Gear 62 Worm Feed Gear Shall 63 Ratchet Feed Gear 64 Large Feed Gear 65 Small Feed Gear 66 Large Spiral Feed Gear 67 Clatch Hub for Spiral Feed Gear 68 Clatch Bracket 69 Sleeve for No. 60 Shalt 70 Clatch Hub for Spiral Feed Gear 71 Large Feed Gear Shalt 72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Lower Feed Dog 77 Lower Feed Dog 78 Hand Wheel Lock-nut for Feed Arm 79 Rushing for Long Feed Arm 81 Feed Sleeve 82 Feed Sleeve Rack 83 Brass Clamp for Feed Sleeve Rack 81 Brass Clamp for Feed Sleeve Rack	d Feed Gear Shait, with Gear		Raise and Lower Linns	
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Worm Feed Gear   Shall	Seed Gear   Shalt   Seed Gear   Seed Gear Shalt   Seed Gear   Seed Gear Shalt   Seed Gea		Lever and Feed Gear Shall, with Cent	
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65 Small Feed Gear 6 Large Spiral Feed Gear 67 Clatch Hub for Spiral Feed Gear 68 Clatch Bracket. 69 Sleeve for No. 60 Shalt 70 Clatch Hand Wheel 71 Large Feed Gear Shaft 72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Upper Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Rushing for Long Feed Arm 80 Hand, Feed Lever 81 Feed Sleeve Rack 82 Feed Sleeve Rack 83 Brass Clamp for Feed Sleeve Rack 84 Brass Clamp for Feed Sleeve Rack 85 Brass Clamp for Feed Sleeve Rack	ed Gear siral Feed Gear siral		Worm Feed Gear Shaft	50
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65 Small Feed Gear 6 Large Spiral Feed Gear 67 Clatch Hub for Spiral Feed Gear 68 Clatch Bracket. 69 Sleeve for No. 60 Shalt 70 Clatch Hand Wheel 71 Large Feed Gear Shaft 72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Upper Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Rushing for Long Feed Arm 80 Hand, Feed Lever 81 Feed Sleeve Rack 82 Feed Sleeve Rack 83 Brass Clamp for Feed Sleeve Rack 84 Brass Clamp for Feed Sleeve Rack 85 Brass Clamp for Feed Sleeve Rack	ed Gear siral Feed Gear siral	64	Large Feed Gear	60
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68 Sleeve for No. 60 Shalt  70 Clutch Hand Wheel  71 Large Feed Gear Shalt  72 Long Feed Arm  73 Short Feed Arm  74 Upper Cross Feed Arm  75 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nut for Feed Arm  88 Bushing for Long Feed Arm  81 Feed Sleeve  82 Feed Sleeve  83 Feed Sleeve Rack  83 Brass Clamp for Feed Sleeve Rack	Cacket.       30         or No. 60 Shalt       30         land Wheel       25         sed Gear Shaft       25         sed Arm       30         ross Feed Arm       30         ross Feed Arm       30         sed Dog       10         sed Dog       10         for Long Feed Arm       20         for Long Feed Arm       30         red Lever       150         ever       150<		Clurch Und for Colon Food Cone	2347
Seeve for No. 60 Shatt Clutch Hand Wheel Large Feed Gear Shaft Large Feed Gear Shaft Short Feed Arm Short Feed Arm Upper Cross Feed Arm Lower Cross Feed Arm Lower Feed Dog Lower Feed Dog Rushing for Look nat for Feed Arm Bushing for Look Feed Arm. Feed Sleeve Feed Sleeve Rack Feed Sleeve Rack Blass Clamp for Feed Sleeve Rack	r No. 40 Shalt   30   1   25   25   26   26   27   26   27   27   27   27		Clurch the del	
70 Clutch Hand Wheel 1 Large Feed Gear Shaft 72 Long Feed Arm 3 Short Feed Arm 4 Upper Cross Feed Arm 75 Lower Cross Feed Arm 6 Upper Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock nut for Feed Arm 8 Bushing for Long Feed Arm 8 Hand, Feed Lever 8 Feed Sleeve Rack 8 Feed Sleeve Rack 8 Brass Clamp for Feed Sleeve Rack 8 Brass Clamp for Feed Sleeve Rack	and Wheel   25		Elach Diacket	
71 Large Feed Gear Shaft 72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Upper Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Rushing for Long Feed Arm. 80 Hand, Feed Lever 81 Feed Sleeve Rack 82 Feed Sleeve Rack 83 Brass Clamp for Feed Sleeve Rack	sed Gear Shaft       25         sed Arm       66         sed Arm       30         soss Feed Arm       31         ross Feed Arm       30         sed Dog       10         sed Dog       10         beel, Lock-nut for Feed Arm       20         for Long Feed Arm       30         seve       150         eve       150         eve Rack       90         imp for Feed Seeve Rack       80         racket for Feed Bearing       1 00         or Feed Gear Shaft       20         asher for Feed Gear Shaft       10         asher for Feed Gear Shaft       10         asher for Feed Gear Shaft       10		Sieve for No. 60 Shatt	
72 Long Feed Arm 73 Short Feed Arm 74 Upper Cross Feed Arm 75 Lower Cross Feed Arm 76 Upper Feed Dog 77 Lower Feed Dog 78 Hand Wheel, Lock-nut for Feed Arm 79 Bushing for Long Feed Arm 80 Hand, Feed Lever 81 Feed Sleeve 82 Feed Sleeve Rack 83 Brass Clamp for Feed Sleeve Rack	ed Arm ed Arm seel Arm Toss Feed Bearing Toss Feed Gear Shaft			
74 Upper Cross Feed Arm  5 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nut for Feed Arm  79 Rushing for Long Feed Arm.  80 Hand, Feed Lever  81 Feed Sleeve Rack  82 Feed Sleeve Rack  83 Brass Clamp for Feed Sleeve Rack	ross Feed Arm       30         ross Feed Arm       30         ross Feed Arm       10         red Dog       10         beel, Lock-nut for Feed Arm       20         for Long Feed Arm       30         red Lever       1 50         eve       1         eve Rack       60         imp for Feed Sleeve Rack       80         racket for Feed Bearing       1 00         racket for Feed Gear Shaft       20         asher for Feed Gear Shaft       10         asher for Feed Gear Shaft       10		Large Prest Gear Shatt	25
74 Upper Cross Feed Arm  5 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nut for Feed Arm  79 Rushing for Long Feed Arm.  80 Hand, Feed Lever  81 Feed Sleeve Rack  82 Feed Sleeve Rack  83 Brass Clamp for Feed Sleeve Rack	ross Feed Arm       30         ross Feed Arm       30         ross Feed Arm       10         red Dog       10         beel, Lock-nut for Feed Arm       20         for Long Feed Arm       30         red Lever       1 50         eve       1         eve Rack       60         imp for Feed Sleeve Rack       80         racket for Feed Bearing       1 00         racket for Feed Gear Shaft       20         asher for Feed Gear Shaft       10         asher for Feed Gear Shaft       10		Long Feed Arm	rie)
74 Upper Cross Feed Arm  5 Lower Cross Feed Arm  76 Upper Feed Dog  77 Lower Feed Dog  78 Hand Wheel, Lock-nut for Feed Arm  79 Rushing for Long Feed Arm.  80 Hand, Feed Lever  81 Feed Sleeve Rack  82 Feed Sleeve Rack  83 Brass Clamp for Feed Sleeve Rack	ross Feed Arm       30         ross Feed Arm       30         ross Feed Arm       10         red Dog       10         beel, Lock-nut for Feed Arm       20         for Long Feed Arm       30         red Lever       1 50         eve       1         eve Rack       60         imp for Feed Sleeve Rack       80         racket for Feed Bearing       1 00         racket for Feed Gear Shaft       20         asher for Feed Gear Shaft       10         asher for Feed Gear Shaft       10		Short Feed Arm	30
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99 Upper pracket for reco bearing.	market for Feed Bearing 100 or Feed Gear Shaft 20 asher for Feed Gear Shaft 10	84	Upper Bracket for Feed Bearing.	
85 Lower Bracket for Feed Bearing	or Feed Gear Shaft		Lower Bracket for Feed Bearing	
86 Collar for Feed Gear Shaft	asher for Feed Gear Shurt 10	86	Collar for Feed Gear Shalt	
87 Fiber Washer for Feed Gear Shurt		87	Fiber Washer for Feed Gear Shurt	
	crew, Bearing	88	Cintch Screw, Bearing.	
88 Clatch Screw, Bearing.		-	fron Column and Base, No 17 Drill	15 70
88 Clutch Screw, Bearing		-	tron Communand Sase, No. 17 Drill	15 70

# THE SMITH THE SOVEREIGN OF ALL ARTISANS



I N the year B. C. 1005, Solomon, King of Israel, spake unto his servants and saith, 'Now that the Temple is finished, let us declare praise unto him who deserveth praise,' and he bade them each speak of the works he hath done.

And Hiram of Tyre, a worker in brass, spoke of the images he had wrought for the mighty Temple by his talent, aided by the thois of steel that were made by the Smith.

And Abinadab, a carver of cedar and kindred woods, declared aloud his praise of the trousmith, who created the tools for his handizeark.

And Geber, a hewer of stone, and Baana, who wrought wonders in iron, and each of the mighty throng of builders, who gathered around the wise King, all admitted that without the Smith who made their tools whereby they carved the precious stones, hewed the marble slabs, and wrought in hammered brass and gold the cherub images for the lordly temple, they would have been helpless and without power.

Then spoke King Solomon, "Bring forth the Smith! Command him into my presence, that he may hear of all this." And straightway cometh from among the artisans a bearded Vulcan of the forge, brawny in face and arms, and with sinews of iron, much amazed with wonder at

his presence before the high King of Israel.

"Didst thou, humble worker of iron, create within thy grizzled brain, and didst thou shape with thy cumping hands, the tools of Hiram, of Abinadab, of Geber, that they might please me with their handiwork? Didst thou fashion the chisel of steel that chipped the marble pillars of the great palace? And didst thou forge from flatning iron those tools so cumpingly devised, that the worker might carve the cedar of Lebanon?"

"Yea, verily, most gracious King, hath I done all this, but all for

praise of thee, and of thy Temple."

"Fear not, I beseech thee, though thou art but an humble Smith. To thee belongs the honor, to thee belongs the praise, and to thee a seat within the temple and upon the throne, for thou hast fashioned by the cunning of thy brain and strength of arm the tools of all those who did build my temple, and I will create thee greater than all these, for thou art the foundation of all." And thereupon the King declared throughout all Israel "that iron was king" and the humble Smith "the Sovereign of all Artisans."



